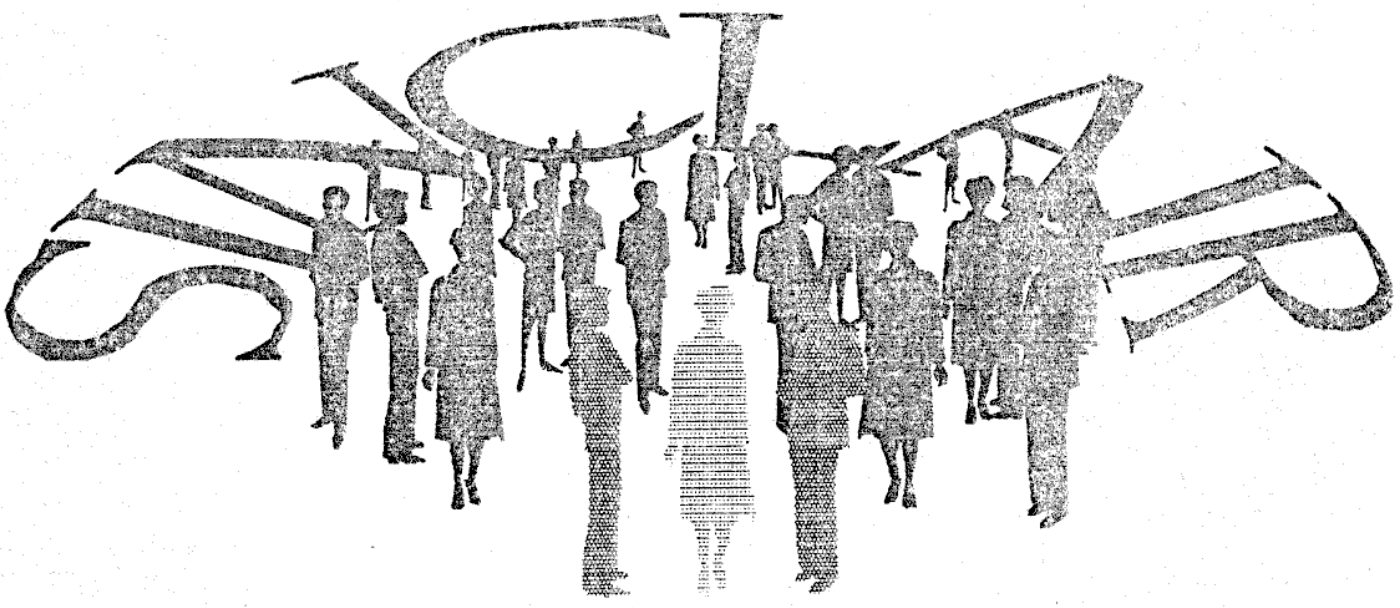
UPDATE!

Magazine



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* UPDATE COMPUTER SYSTEMS MAGAZINE *

UPDATE COMPUTER SYSTEMS is Edited and Published by Frank and Carol Davis of P.O. Box 1895, Peru, IN 46970 USA. The phone number is 317-473-8831 for both voice and fax, with normal phone hours being between 5 P.M. and 9:30 P.M. Eastern Time during the week and noon to 6 P.M. on weekends. Please use the answering machine if we are not home. Most answers to questions left on the machine will be by mail, long distance charges are too costly for a small magazine.

Mailing date of the magazine: all issues will be mailed out near the 20th of the months of October, January, April and July. All mailings within the USA are by bulk mail and may take a few weeks to reach you at the most. Those wishing to have faster service may pay $4 extra for First Class Mail. The present rate for North America is $18 in US$, and $22 for the rest of the world. Back issues of the magazine are available for $16 per year in North America and $18 elsewhere (it is cheaper to mail a bunch as opposed to one issue at a time). There are four issues to a year, with each year of a subscription starting in October and ending with the July issue, at which time your subscription renewal is due. Timely renewals are what keep us in business!

Assistance in publishing this magazine is provided by you the readers, many of whom have contributed often in the way of reviews and articles. We offer you our heartfelt thanks. Our main assistant locally is longtime friend and colleague, Eliad P. Wannum, Poet and Psychologist, as well as Sinclair computer user. Many thanks to our regulars such as Mike Felerski, Bill Cable, Peter Hale, Paul Holmgren, Al Feng, Don Lambert, Bob Hartung and many others. You are all welcome to submit material for inclusion in the magazine. Please make all hard copy submissions letter or NLQ; no draft print copies, as we do not have much time for re-typing. Send at least two copies hard copy and the article or artwork on disk where possible. No audio tape submissions, as we do not use tape as a media, please. Try to avoid flowery or hard to read fonts...unless you are showing us a sample of the output of a program. If artwork is to be included in the article, please let us know in what order you think it should be displayed.

Those wishing to place ads in UPDATE MAGAZINE: We have two ways of handling ads. ONE, we will do reciprocal ads for other publications (generally on a year for year basis, with you sending us a copy of the issues the ad is placed in). The other way is to purchase ad space from us, with the following rates in effect for now: $15 per quarter page; $25 per half page; and $40 per full page ad. This is per issue. For inclusion in all four issues, you pay for three issues, in advance, and get the fourth ad free. Should you have questions on this please contact Frank Davis, by mail or phone as listed above.

We hope to be of service to you. Thank you!

** UPDATE COMPUTER PAGE DIRECTORY **

The computer that an article concerns is marked by using the following mark at the start of the page: TS = article for TS2068 or Spectrum; QL = article for QL; ZX = article for TS1000, ZX81, TS1500; 88 = article for the Z88.

Front cover art by Abed Kahale of CATUG, the Chicago area user group.

GI- Page 1: Directory of articles in October Issue
GI- Page 2: Editorial by FWD
GI- Page 3: Dayton Show Report by F. W. Davis
GI- Page 5: Computer Classics - Ad
GI- Page 5: QZX - Ad
TS- Page 6: PNET (Barcode Label Maker) - Bottle Cap Software - Ad
TS- Page 7: An Electronic Spreadsheet: Function and Application by Paul Shelley
GI- Page 13: Business Cards- dealers, publications, etc.
TS- Page 14: Spreadsheet Calculator - AFR Software -Ad for TS2068 & TS1000
TS- Page 15: Cycle Accounting - AFR Software - Ad for TS2068 & TS1000
TS- Page 16: Keeping Records by Abed Kahale
TS- Page 19: 2068 Display Block - Moves by Bob Hartung
GI- Page 20: RMG Ad
QL- Page 21: QUANTA - Application and library revisions
GI- Page 23: PRO/FILE - On The QL by Kenton Garrett
GI- Page 24: RMG Update News
QL- Page 25: Archive Series - Part 14 (Cable Column) by Bill Cable
QL- Page 27: QL Corner by Bob Gilder of LIST
QL- Page 29: QLuSTer v5.105 by Al Feng (revised version!)
QL- Page 30: QLuMSi DOS v4.20 by Al Feng (revised version!)
GI- Page 32: Mechanical Affinity - Ad
QL- Page 34: QL Tidbits and Tips Since The Last Issue by E. P. Wannum
QL- Page 36: Superbasic Data Types (source unknown)
QL- Page 37: Qubbesoft P/D Ad & Kaiser Ad
QL- Page 38: QL Corner by Bob Gilder of LIST
GI- Page 39: T/SNUG Information About and Contacts
88- Page 40: First Time Procedure For Your Z88 from Cambridge
GI- Page 42: Help Wanted/ For Sale/ Items Needed
TS- Page 44: 24-Pin Bit Image Graphics for 24-Pin or Bubble Jet Printers in Epson Emulation by Larry Crawford
88- Page 48: Rechargeable Batteries with the Z-88 from Z88 User
88- Page 48: (Z88) Memory Expansion from Z88 User
88- Page 49: Woodward Technology - Double Whammy - Ad
GI- Page 50: QL Survivors Source Book & Z88 Source Book - Ad

Back Covers - TS2068 & QL Issue Disks

OCTOBER EDITORIAL by Frank Davis

Welcome to the beginning of another smashing year of QL, TS2068, Z88, and a dash of TS1000 computing. I hope for this to be our best year yet. A few of you may not have realized it, but in the area of the QL and the Z88, the maturity of the machines is beginning to pay off very well. In this issue and the next few I hope to show you just what I mean. I will not be leaving out the users of the TS1000 and the TS2068. We will explore some of the options open to you and the future of these great little machines. They can have a future, if you are willing to make it so. Many things are happening to these computers that those who have not patched into the network of Sinclair users just do not know about. One way to stay atop all this is through magazines, such as Z88 EPROM, IQLR, QUANTA, T/SNUG newsletter, user group newsletters, and most dear to my heart, UPDATE MAGAZINE! I honestly believe that UPDATE gives the most balanced, up to date view on Sinclair computers in the world. We are the only one I know that now covers them all - from the Z88, Spectrum, QL, QXL, TS1000, ZX81, TS2068, and one of our main areas is the disk systems available for these machines. We try to present user-generated software that you can use, and have a place we can all come together to express ways of making these machines continue to be active and useful in our lives. They are not the latest whiz bang off the production line, this is true. But ecologically speaking they work and they can be upgraded in major ways, as opposed to thrown away! Most of the time another user or company can show you what to do.

For now, I once again step down off my soap box to say hello to all of you. Carol and I have entered into our 4th year of editing and producing UPDATE. It seems to have changed in many ways from when Bill Jones first brought this magazine to life 7 years ago. In many ways it has remained the same, as a voice for Sinclair users. We try not to favor any certain machine or disk operating system, but rather to present all we receive that is fit and ready to print. In this way we give vent to all of the machines and try to balance the content. I even try to limit the editorials from rambling for too many pages. The editorial is meant to be the editors view on things and is the only chance I try to give myself. The rest of the magazine tries to be fair and objective on programs and hardware. If you do not see your particular DOS or drive system being actively supported in UPDATE, it is because no one has submitted anything, not because I do not like it. Unlike some clubs or user groups where some folks try to be snobbish over which machine they think is best or should be the only one, we give credence to all of Sir Clives orphan children.

Those of you who have closely read the pages of UPDATE and IQLR have noticed that the QL does not have quite as many programmers, hardware hackers and dealers as were here 7 or 8 years ago. That is true. What we do have now are much more sophisticated and useable hardware and software. Those who have used PERFECTION and TEXT87 as word processors know that they are far beyond what we were looking at in 1984-5. Quill is still a good program, and now even more readily available as EXCHANGE (the latest and fastest version of all four PSION programs all combined to work together) has been released to the Public Domain. It is not my word processor of choice, as I like to use more fonts and sizes of type than it has available. Another example of program maturity is the case of LINEDESIGN and QDESIGN 2, versus some of the early art and text programs for the QL. Both use vector fonts, which means that when enlarged, no clarity is lost. In earlier programs, they appeared choppy and grainy when enlarged, and smudged and hard to read when made smaller. With LINEDESIGN you can even import fonts meant for other machines. With Qdesign, you can purchase a VectorEdit program to create more vector fonts. Both allow the easy import of graphics and clipart. Publishers Pack from Text87 is another such wonder.

Those who have a TS2068 will remember the early days of MSCRIPT and TASWORD. They seemed great at first, but soon were seen as hard to use and lacking in features as most of us migrated to disk based sytems. Well, as you should all know, Jack Dohany has done wonders for MSCRIPT as a word processor, and it is now hard to compare it to the original. Larry Crawford, as well as a few others have done the same for TASWORD 2 for the Oliger and Larken. See his address elsewhere in this issue to contact him. Do please pay attention to the fact that neither one of these programs is in the public domain. To get an upgrade from either person should only be done by those who legally own the programs. At least buy a used copy of MSCRIPT or TASWORD. Bye.

REPORT ON THE DAYTON COMPUTERFEST

BY FRANK W. DAVIS

The last weekend of August found Carol and I on our way to the Dayton, Ohio Computerfest for 3 days of visiting, selling and motel living. This was the third year that UPDATE Magazine has attended this show and the fifth year that I have personally attended. We found this year, as in all previous years, the show was different. The number of people attending each year is sky rocketing. The first year I recall any figures was for 12,000, then 15,000, then 27,500 and around 40,000 this year. The show is for sure on a large increase in attendance.

We got there Friday afternoon and hooked up with my partner in my other Sinclair enterprise, Mechanical Affinity....none other than Paul Holmgren. He had beaten us to Dayton. He had already joined up with Hugh Howie from Canada, and Don Lambert from Auburn, Indiana, as well as Charles Reese from St Louis, to name just a few. We got settled into our motel room at Red Roof Inn, then contacted Tim Swenson, to get directions to his house. Jeff Moore, the last publisher of SyncWare News and Quantum Levels magazines, had left us plenty of boxes of TS1000, TS2068 and QL items, such as software, computers, and monitors, to sell for him. We got to Tims and picked the stuff up and then headed in a caravan following Paul to the Hara Arena, the showplace for the Computerfest. We arrived there and went through the usual hassle of trying to find your tables and unload your merchandise and get set up for the next day. They were a bit more unorganized at this point than in previous years. We got set up as much as was possible, and then headed back to the motel to get some rest before the show.

Bright and early we got to the Hara Arena the next morning and proceeded to put prices on new items and uncover and set up what we had not done the night before. T/SNUG (represented by Don Lambert) was there sharing a booth with the Chicago Timex-Sinclair Users Group (represented mainly by Bob Swoger). Bill Heberlein and Neal Schultz of SMUG (from Wisconsin) had a couple of tables selling Sinclair, IBM and other related electronic and computer items. They have occupied the tables next to us for the last three years and are always welcome friends. The Dayton Sinclair SIG of DMA (Dayton Microcomputer Association) was mainly represented by Gary Ganger and Tim Swenson and had a table across and to the right of us. They have always had a computer museum, going from the early ZX80, ZX81, TS1000, TS2068, TS1500, QL and all of the known clones except for a Thor and QXL. I want to thank this group for all the support they have done to give us Sinclair and Timex users a place to get together each year. THANKS. For the next two days we spent time selling hardware and software for Mechanical Affinity, and selling Subscriptions, QL and Z88 Source Books and back issues for UPDATE Magazine. I (Frank Davis) am also in the business of selling virus proof Shareware and Public Domain software for the Amiga line of computers. I had some of my more popular titles there with me. It did not seem to me that we had as much in the way of foot traffic at our booths as in past years, but those who came by definitely spent more money to upgrade than in past years. We sold a lot of Hermes, Minervas, Keyboard 90 Interfaces, lots of the latest software, and even some computers, ranging from at least one ZX80, three ZX81s, two TS2068s and a three QLs. Sales of the Gold Card were still fairly strong, and we have also sold a few of the new QXL cards from Miracle that transform a lowly IBM into a speedy and large-memory QL. Part of this problem of lessened foot traffic could have been due to the fact that the DMA group had shifted around the floor space for some of the other booths, and added more space.....and then changed some of the Arena entry points. We were still in the exact same location as in past years. I hope it was some reason like that and not a sign of waning interest in TIMEX and SINCLAIR computers! Other changes of course dealt with the fact that too many of our users seem to more and more think that if an item or software is for an orphaned computer then the item should be for free, or dirt cheap. We

have to get out of that way of thinking and realize that a price should be fair, in order to keep programmers, hardware designers and dealers willing to put forth the effort for us that we need in order to expand and take advantage of future hardware and software developments. At the Computerfest, I saw this in relation to many computer systems other than our own. I saw IBM 286 computers systems with 20 or 40 meg harddrives, CGA monitors and 1-2 meg of RAM going (or attempting to go) for around $250, and Apple IIs for under $100. Both were having a hard time getting buyers. They were easily worth that much and more, and would still have sold for more by mail order or in a store. However, at the show people thought these were too high of a price. With this type of attitude, it will be hard to get folks to develop new items for these machines. If you have not already done so, check out my editorial for this issue, for more thoughts on this subject.

I find similar thoughts on occasion from some subscribers, such as one who wrote praising the content of UPDATE Magazine, yet telling me he thought it was priced too high. What he fails to realize, and may not even care about, is that magazines like COMPUTE, derive all of their income from ADVERTISING, not from the small rate they charge for a subscription. We do not have that many paid advertisers, and therefore we charge what it costs to produce the magazine and mail it to you. That is why we offer back issues at shows such as the Dayton Computerfest cheaper; we have no mailing costs at the show. I do welcome polite comments on this subject. Better yet get a friend a subscription to UPDATE as a gift this year (Christmas, birthday, maybe even as an extra anniversary present). That is the end of serious discussion, now back to coverage of the show.

On Saturday night a goodly number of us gathered at Tim Swensons home for a cookout in his back yard. My thanks to Tim and his wife for their hospitality. It was a great time for eating and visiting. Who was there? I will try, but can not say for sure if I am leaving anyone out (if so then please forgive the oversight). Don Lambert from Indiana, as well as Carol and Frank Davis and Paul Homgren, also from Indiana; Bob Swoger from the Chicago area; John Impellizzeri and Don Walterman from Michigan; Jon Kaczor and Doug Gillespie and two others whose names have slipped my mind from the Cleveland area; David Lassov from Arizona; Neal Shultz and Bill Heberlein from Wisconsin; Harry Spencer from Alabama; Mel LaVerne and his son from Tennessee; and Keith Watson. I feel that I have forgotten a least two or three of those who attended, but did not mean to slight you, I have just never had a real good memory on names (ask my mother and she will tell you she remembers more of the people I went to high school with than I remember). The picnic was a delight and the food was plentiful. Everyone chipped in and brought stuff to serve, and no one that I knew of went away hungry. In previous years we had gone to a steak house near the motels to gather for Saturday evening, but being seated at 6 or 7 tables makes it harder to conduct conversations or move around as we did at the picnic. Gary Ganger also attended.

If all goes well, we hope to be at the Dayton Computerfest again next year. Carol, Paul and I have always enjoyed getting out to these shows to meet our customers and readers. We are also users of Sinclair computers. We liked them so much we kind of refused to let them die in North and South America. We do appreciate your support. There is just one thing that may get in the way of our going to Dayton next year. At the end of the show many of the other dealers in the flea market area were telling us that next year DMA was considering putting the user groups and flea market out on the parking lot or in a tent. Should this happen, I will not bother to attend at all. The show can go in the direction that it gives too much to the professional booths such as IBM or Microsoft, and forgets its roots - as a show started for user groups and a great flea market.

BY THE WAY, LAST ISSUE I ASKED YOU, THE READERS, IF ANY OF YOU WOULD BE INTERESTED IN ATTENDING A SHOW LIKE IN NEWPORT. ANYONE???

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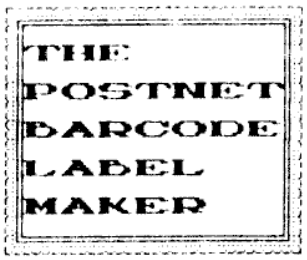
QZX

The Journal Covering Amateur Radio and Sinclair Computers
ZX80, Micro-Ace; ZX81; TS1000, 1500, and 2068; QL; Z88
Alex. F. Burr, K5XY, Publisher
2025 O'Donnell Drive
Las Cruces, NM 88001
1993 July 7

QZX is a monthly newsletter publishing articles of a technical nature of interest to Radio Amateurs and other technically oriented people from all over the United States and some overseas countries. The articles relate to any of the Sinclair computers. The US subscription rate is $15.00 per year. For a sample issue please send $1.00 (postpaid).

PNET . . .

From
Bottle
Cap
Software



Written by: Mike Felerski
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Fairfield, OH
45014-8309

(513) 829-7138

[$5.00 PP]

Introduction

This program allows the user to create mailing labels which contain the United States Postal Service's Postnet© barcode below the address. Further information on how the barcodes are decoded can be found in issue 1.1 of the Sinclair World Gazette which is published in Update Magazine (P.O. Box 1095, Peru, IN 46970)

Important Points

The following are important points to know about the PNET program:

1. The program name is PNET.Ba and has a piece of machine code called COP8L.Cd which is loaded and is used to copy only 8 lines from the screen to an Epson compatible (FX) printer through an Aerco printer interface. Your own code can be loaded instead.

2. Only ZIP+4 Codes can be converted. No subsets or supersets of the Postnet can be converted (i.e. 5 number Zip codes or carrier route codes, etc.)

3. Labels must be set to print on almost the very first column of the printer since the entire width of a standard 1" x 3.5" label is used. The address ares is 4 lines by 30 characters with the Zip+4 code taking up the 5th line and the Postnet barcode the 6th and 7th lines. The 8th line is used for the spacing between labels.

4. The author of the PNET program assumes no responsibility for accuracy of the program or its output for any reason.

5. Now that the legal bits are out of the way, enjoy the program and drop me a line if you like and/or use the program or have any useful suggestions --MJF

Loading and Running PNET

From the cassette version, LOAD "PNET" or LOAD "". When the program has loaded, the main (and only) screen will appear. From here you can (E)dit the text, enter the (Z)ip+4 code, (P)rint the label, load a (F)ont, (C)lear the label, (S)ave or (L)oad a label via diskette or cassette* or obtain a (D)isK catalogue.

Edit provides 4 line editing with Delete, Enter (Newline) and wrap-around cursor movement.

Zip+4 allows numeric entry only. Sorry no Canadian version as of yet!

Print allows multiple labels to be printed as well as an escape option.

Font load works with standard Spectrum/TS2068 8x8 pixel fonts.

The rest of the options are self explanatory.

Finally

Since printers vary, Keep in mind that the USPS rule is that there can ONLY be 22 ±2 bars per inch! If your printer cannot produce codes within this limit, please do not use that printer to create labels...
...Note: Using "STOP" Key at the main menu will exit to BASIC.

---

* PNET is provided with a Cassette version on one side of the tape and a LarKen disK version (the author's system) on the other side.

"An Electronic Spreadsheet: Function And Application"

-- An electronic spreadsheet is to the pencil, eraser, and slide rule what a jet plane is to the covered wagon. Cover the continent in a few hours (without error) not a few years with a lot of backtracking - -

Paul Shelley
SPREADSHEETS PART II
Vol. 2:11
"T.S. User Newsletter"

PREFACE

Some people may seem undismayed by the aforementioned statement, considering that they have prior knowledge of what is an "Electronic Spreadsheet Calculator" (ESC) and that they know how to use it.

However, for the rest of the people who can't or don't yet appreciate the significant meaning conveyed by this colloquial expression, it is for them that this presentation is primarily intended.

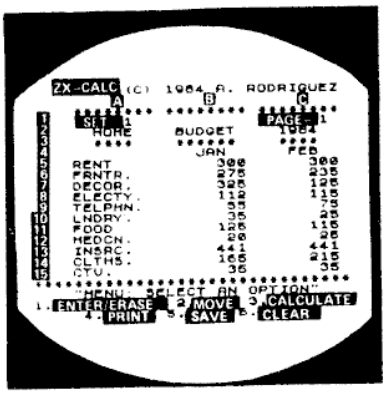
My purpose herein will be to demonstrate that for the Timex/Sinclair family of computers there are ESCs capable of doing the two main things that an ESC was developed to do: 1.) to handle "what-if" calculations electronically and 2.) to serve as a general framework with which to build "models" for the purpose of continually summarising, reporting, and analyzing, in matrix form, any financial, accounting, mathematical, engineering, and scientific manipulation of numerical data. And that the ESCs available for the T/S can be acquired for a fraction of the cost (and still carry as much "punch") as do the more sophisticated ESC versions for the higher priced computers.

I will use an ESC that is for sale by my own company to illustrate the preceding facts to the experienced as well as the inexperienced user in the audience. Literature about this ESC is readily available. Though, it is hoped that the distribution of such literature will only be deemed academic in semblance compared to the illustration of this ESC as our main example throughout this presentation.

PART I

In our first step toward demystifying what is an ESC and what its applications are I would like to begin by showing you what my ESC looks like from the start (See Fig. 1)

ZX-CALC



(fig. 1)

As you can see it is basically a grid composed of columns (A-O) and rows (1-30); where each intersection (column/row) meets it is a place for holding some sort of data (e.g., a label, value, or formula) and these data compartments are referred to as "cells".

The concept of an ESC is fairly new. The first ESC was introduced in 1978 by a student at The Harvard Business School by the name of Dan Bricklin. Mr. Bricklin's idea was that a spreadsheet provided a "better way to perform endless recalculations of balance sheets, income statements, and forecasts required whenever a single assumption changed." Reportedly, he modeled his first microcomputer-based spreadsheet program to "an electronic black-board and electronic chalk." His original work had 5 columns and 20 rows. Later on Mr. Bricklin teamed up with Robert Frankston who enhanced this first ESC by increasing the number of cells and developed some "user-friendly" features and packed the results into a 20K program for the Apple microcomputer. To make a long story short, this original invention was later named VISICALC and it is no secret that this software package went to become one of the most successful selling programs in the years prior to another popular integrated software tool called Lotus 1-2-3.

My company's ESC for the T/S is called ZX-CALC (or T/S CALC 2000 for the T/S 2068). It was primarily designed after the VISICALC program. Not exactly as VISICALC, but similar in function, it can handle just about any procedure than the higher priced version.

My first task is to demonstrate how my program handles "what-if", contingency calculations like the higher priced ESCs do. It is primarily with "what-if" calculations that a spreadsheet proves its most salient advantage and versatility versus the vertical-statically-fixed formatted programs which offer a limited method for storing, displaying and manipulating numerical data. Also ZX-CALC has the ability to use its resources for producing any number of various display "models" that the latter programs do not have.

"What -if" calculations can be understood to occur in two set of

circumstances. First a cell may contain data in the form of a formula such as: A01+B01 assigned to C01. By this I mean that the cell C01 contains the formula A01+B01 continually, until the formula is changed or deleted from the program and that when you use the automatic-calculate option of the ESC the result of said formula will always appear in cell C01 and that the result will only vary if the values in cells A01 and B01 should happen to change. Second, the program may assign the formula A01+B01 to cell C01, but do so by entering this formula in the form of an equation each time the final result has to appear. That is, in the first case the formula is calculated but it is also hidden and saved for later use by the program; whereas, in the second case no formula is hidden and saved by the program but it is allowed to be used and reused by manually entering it everytime the result is to appear in the designated cell (which in this case is cell C01). What is important to note from either "what-if" method of calculation is that the final result of a calculation can be changed by simply recalculating the result-cell with the program as the data varies within the given formula. This ability to handle recalculations is what makes ESCs so unique in handling and displaying numerical data. Without this capacity to do recalculations there would be no other method than "backtracking" and using an eraser to change the intermediate and final results and later run through the entire calculation mode that was originally used to arrive again at the new intermediate and final total results of a given matrix of numbers.

With respect to ZX-CALC it is the second set of conditions that apply regarding how "what-if" recalculations are done by it. That is, this program does not hide and save formulas in cells; it requires that an equation be entered manually each time you wish to recalculate the data in the ESC. There are six reasons why ZX-CALC has this mode of "what-if" recalculation. First, it has to do with speed. It approximately takes 33 minutes to automatically recalculate the entire ESC. This is alright if there are numerous formulas scattered throughout the entire ESC, but in the case of just a few calculations it is preferable to use an equation that can generate actual results (e.g., sub-totals, totals, etc.,) within a matter of a few minutes instead of waiting a half-hour each time the ESC is recalculated. Second, there is usually (as in the case of another ESC known as VUCALC) a limit as to the number of formulas that can be included in an ESC. With ZX-CALC there are no limits to the number of

formulas that may be entered into the spreadsheet, since an equation is used to reenter the formula into a given cell each time the spreadsheet is manually instead of automatically recalculated. Third, ZX-CALC is an applications program and how it is applied presents a more flexible and dynamic style than a program that requires that cell addresses be included within a given cell and hidden and saved within same for further recalculation. That is, you can use and enjoy using it more so than if the "shoe was on the other foot." Fourth, though the program code to allow my ESC to operate in the first "what-if" mode of hiding and saving formulae was written it was a matter of priority in calculation features included within the program that determined its fate primarily as a manually recalculatable ESC. For example, ZX-CALC includes a SUM function that allows one or more columns/rows to be added together to obtain subtotals, cumulative totals and final totals. Also my ESC includes a "replication" feature that allows cell data to be loaded or calculated according to one or more entire column/row, simultaneously, depending up to what cell address is "absolutely" or "relatively" specified in a given equation to copy a given calculation or data. Both of these two features were esteemed to be more important to calculation and recalculation procedures than including the first "what-if" mode within the program. So the fact that ZX-CALC doesn't reference, hide and save formulae within a cell was a matter of trade-off between what comes first: versatility and speed versus simple "good looks." Fifth, there just wasn't enough room in RAM to add the first type of "what-if" mode into the program. But in short it wasn't necessary and it would have created (as I have already proven) certain disadvantages if it had been included. Finally, even though you are required to recalculate manually the spreadsheet there are no serious defaults in doing so, since the program is the one still responsible for handling the actual operational and mechanical control of a given equation whenever you attempt to recalculate the data in the spreadsheet. Therefore, the computer (not you) is what determines the final outcome of calculations performed with my ESC on a manual basis.

PART II

In this section of the paper I would like to focus on the valuable aspect of an ESC as a "model" builder using worksheets and templates to define and create a wide variety of frameworks with which a user may rely on repeatedly

to record and report data on more than one occasion in the same identical manner.

To help us understand exactly what a "model" is I have chosen a particular accounting model package (sold by my own company) that makes use of the entire ESC ZX-CALC. The model is actually a supplementary application of ZX-CALC that serves to construct a financial picture of a relatively small enterprise (such as a sole proprietorship) for the purpose of analyzing or forecasting its financial performance. The name of this accounting model is called R.F.R.G. -- which stands for Ready Financial Report Generator.

This model allows the generation of 10 different financial-status reports about a company's past business history on a 6-12 month basis.

What the content of this text is concerned with is a layman's explanation of what the terminology of the model means and what the model does. This will ease the process of summarizing and recording the essential numerical values next to each subcategory of each of the ten categories comprising this accounting model package. In turn, you can use the program to perform your calculations in order to fill in the necessary blanks.

After the model has been entered into RAM then you fill in the appropriate blanks next to each template (i.e., Set1, Page-1). Each subsequent worksheet is Page-2 of the current Set with the next worksheet being Page-1 of the next higher-numbered Set then Page-2 of this Set . . ., and so on.

Within worksheets 1, 2, 3, and 4 we have the total picture that would generate a complete "cash flow" statement. This statement essentially reports the amount of money available, invested, how it was invested, and how much of it is left either in your pockets or left in a bank account. In worksheet 1 we have 2 subcategories under cash flow, which are "cash" and "cash receipts." Cash is the actual amount of capital you initially decided to invest in your business. Interest is the revenue earned on cash invested in some kind of demand deposit: checking, savings, and certificate-of-deposit accounts. "Cash Beginning" is the sum of both cash and interest. That is, it is the money used to run a company's total operations. Cash receipts are monies loaned, owed to and paid into a company by creditors, clients, or stockholders of the company, respectively. Cash receipts are monies that when they are available to and are used by the company they normally are applied

toward some purchase or amortization of some debt that the company incurred due to its regular operations. In worksheet 2 we list the "operating expenses" of a company. Here we list the overall administrative and selling expenditures of a company, including the interest service charge a company must pay if it borrowed money at a specified rate of interest. (Remember, during the preparation of your financial reports you must set a definite, limited period of time during which these figures are compiled and recorded, therein). In worksheet 3 you report the depreciation of all fixed assets preferably using the straight-line method. With this method take the cost of a given product-good, subtract its residual value (e.g., about 35% of original cost) and devide by the number of life-years you believe the given product will last. In worksheet 4 you report total capital appropriations in order to obtain the sum of a company's financial burden. You then subtract cash-beginning from total disbursements to obtain "cash ending," which is the money a company has on hand, usually in the bank or are funds that it must borrow to meet current expenses.

In worksheet 5 we have two reports. One is an "income statement". This report lists total sales and cost-of-goods-sold and subtracts them both to obtain gross profit and then subtracts gross profit from operating expenses to obtain total net income for a specified period of time. Next is the most essential report of them all which is a "balance statement" that reports a company's total assets compared to its total liabilities and stockholder's equity. By following each individual sub-category listed therein and referring to each preceding worksheet you will be able to record the proper figures needed to obtain a balance of assets-to-liabilities/equity. Worksheet 6 is simply the continuation and final segment of the "balance statement" report.

Worksheet 7 is a display of various important financial ratios that serve as a quick guide to making current decisions and investment forecasts about a company's operations. In case you are unfamiliar with some of the terms used in this worksheet this is what they mean: (a full explanation of all labels used within the accounting model are in an Appendix enclosed with the package), Crt Rto, = current ratio; it is obtained by dividing current assets/current liabilities, Quk Rto. = quick ratio; it is obtained by dividing current equity/current liabilities. However, both ratios

must be stated in relation to the number 1 (i.e. if current assets are $90,000.00 and current liabilities are $35,000.00 then the current ratio should be displayed as 2.57:1). Equity is defined to mean the total capital stock plus the retained earnings of a company within a specified period of time.

Worksheet 8 displays a "capital statement" which is the total capital assets of a firm less any cash withdrawals that may occur within a specific time period during which the balance statement was prepared.

Both worksheet 9 and 10 comprise a "working capital statement". This report serves to demonstrate whether or not administrative expenses are covered by the monies obtained through the sole income earnings of the company without relying on its net equity. In this statement, though it does not appear therein you may also report (under "working capital provided") the monies obtained through the sale of a company's fixed assets as well as any deferred income tax taxes and withholdings of employee's salaries and wages and the sale of capital stock in the company. Since this accounting model is designed mainly for a sole proprietorship like my company is, I felt that it was not necessary to include these subcategories within this final statement. If necessary, however, any user may expand worksheets 9 and 10 to include these other 4 sub-categories if they indeed do apply.

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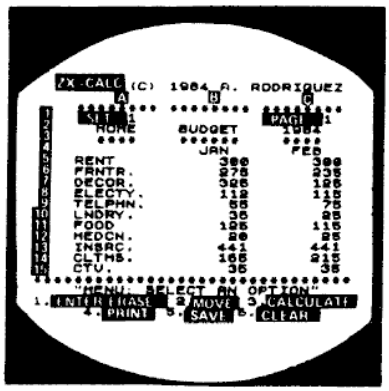
ZX-CALC



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Keeping Records

Abed Kahale

While there are a few "Data Base" software for the 2068 such as PROFILE, I opted to roll my own simple program. This program can be used for any record keeping or filing such as video cassette library, telephone directory, floppies, CDs, addresses, membership list etc. As written, the program will keep 1000 records 32 characters each with 3K of memory left over.

The Menu Selections:-

❶ Start a NEW records file.

❷ Add or UPDATE a record.

❸ LIST the records to the screen starting anywhere in the file.

❹ FIND a record or title by ENTERing the first 3 characters or digits. (It is fast!)

❺ SEARCH (wild-card) by ENTERing letter(s), number(s), or a combination thereof, especially if the spelling is unknown, the computer will find them in due time. Or to list records having something in common.

❻ CORRECT. If a mistake is found while LISTing the records, ENTER the record number, the record will be on the screen, reENTER it correctly.

❼ PRINT. Select what to be printed and the left margin, send it to large printer. Four columns can be printed on the same page using condensed fonts to reduce paper shuffling.

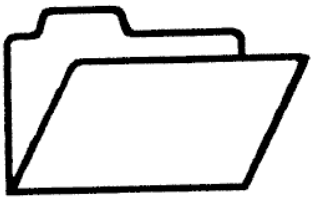
❽ SORT the records alpha/numerically using SHELL SORT routine which is the fastest for this application, about 100 records per minute.

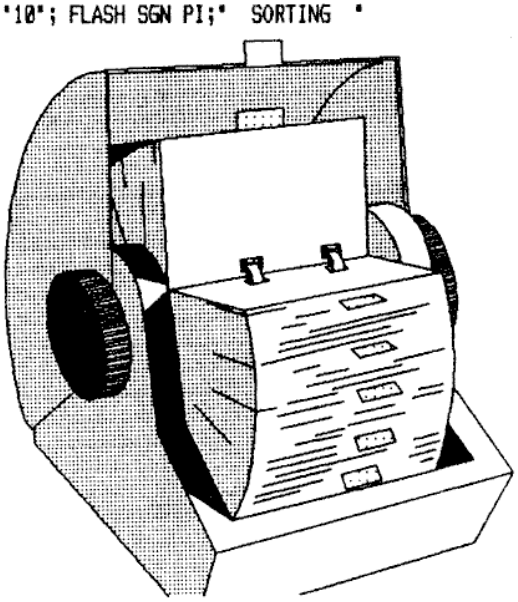
❾ CATalog disk.

❿ SAVE "program" LINE 10. Use GOTO G if you **break**; do not RUN except for the first time after typing the program.

```
  5 DIM O$(1000,32)
  10 CLS : LET G=10: LET H=100
  12 POKE 23658,8: POKE 23609,10: PAPER 1: INK 9: BORDER 1: BEE
P .03,40: BEEP .05,42: BEEP .03,45
  15 PRINT  PAPER 5;"RcorDBase    by Abed Kahale 1992"
  20 PRINT '"1 - Start a NEW File"
  25 PRINT '"2 - ADD new record(s)"
  30 PRINT '"3 - LIST records"
  35 PRINT '"4 - FIND a record"
  40 PRINT '"5 - SEARCH, Wild-Card "  Use (GOTO G) after BREAK
  45 PRINT '"6 - CORRECT an entery"
  50 PRINT '"7 - LPRINT records list"
  55 PRINT '"8 - SORT records"
  60 PRINT '"9 - CATalog disk"'TAB 19; INVERSE 1;"FREE MEMORY"
  65 PRINT "0 - SAVE to disk";TAB 24; INVERSE SGN PI; FREE
  70 PAUSE NOT PI
 100 LET L$=INKEY$
 110 IF L$="1" THEN  GO SUB VAL "200"
 120 IF L$="2" THEN  NEXT J
 130 IF L$="3" THEN  GO SUB VAL "600"
 140 IF L$="4" THEN  GO SUB VAL "700"
 150 IF L$="5" THEN  GO SUB VAL "900"
 160 IF L$="6" THEN  GO SUB VAL "3000"
 170 IF L$="7" THEN  GO SUB VAL "4000"
 175 IF L$="8" THEN  GO SUB VAL "8000"
 180 IF L$="9" THEN  CLS : RANDOMIZE USR H: CAT "",: PAUSE 0
 190 IF L$="0" THEN  GO SUB VAL "9000"
 195 GO TO G
 230 FOR J=1 TO 1000
 240 CLS : PRINT '"ENTER ""Z"" TO TERMINATE ENTERIES"
 250 PRINT AT VAL "10",VAL "10";"ITEM NUMBER "; FLASH 1;J
 260 INPUT 'Title, Cassette# & Counter read-ing?"'' LINE C$
 265 IF LEN C$>32 THEN  BEEP .5,40: PRINT  INVERSE SGN PI;" Ove
r  32 Characters  - ReENTER ": PAUSE NOT PI: GO TO VAL "240"
 270 IF C$="Z" THEN  GO TO G
 320 PRINT ''C$
 330 PRINT '''If Correct"; INVERSE SGN PI;" ENTER"; INVERSE NOT
PI;" If Not, ENTER any letter"
 340 INPUT Z$
 350 IF Z$<>"" THEN  GO TO VAL "240"
 360 LET O$(J)=C$
 380 NEXT J: RETURN
 630 CLS : INPUT "START WITH # ";Q
 640 FOR M=Q TO J
 650 PRINT  PAPER PI;M; PAPER SGN PI;O$(M): NEXT M
 655 PRINT 'TAB VAL "20"; INVERSE 1;" NO MO  ": PAUSE NOT PI: R
ETURN
 720 CLS : INPUT "Title? (First 3 Letters)"'' LINE N$
 722 PRINT "LOOKING FOR>>-> ";N$
 730 FOR M=1 TO J
```

```
740 BEEP .005,38: IF 0$(M)( TO 3)=N$( TO 3) THEN  GO TO 770
750 NEXT M
760 PRINT 'TAB VAL '20'; INVERSE SGN PI;" NO MO  ": PAUSE NOT PI: RETURN
770 PRINT  INVERSE 1;M; INVERSE 0;0$(M)
775 GO TO 750
780 PAUSE NOT PI: RETURN
890 REM ----==(WILD CARD SEARCH)==----
900 CLS : INPUT "ENTER any character(s)!"'' LINE X$
905 PRINT "SEARCHING FOR>=->  ";X$
910 PRINT : POKE 23692,255
915 FOR N=1 TO J
920 FOR K=1 TO 33-LEN X$
930 IF 0$(N,K TO K+LEN X$-1)=X$ THEN  GO TO 960
935 NEXT K: NEXT N
940 PRINT 'TAB 20; INVERSE SGN PI;" NO MO  ": BEEP .5,40: PAUSE NOT PI: RETURN
960 BEEP .03,40: PRINT 0$(N)
965 GO TO 935
970 RETURN
1000 REM  DELETES SPACES AFTER SORTING
1020 FOR N=1 TO J: LET 0$(N)=0$(N+1)
1025 BEEP .005,40: NEXT N: GO TO 6
3000 CLS : INPUT "ENTER Record # to be corrected"'N
3010 PRINT  INVERSE SGN PI;0$(N)
3030 INPUT "ENTER the correction"''A$: IF A$="" THEN  RETURN
3040 LET 0$(N)=A$: RETURN
4000 CLS : RANDOMIZE USR H: OPEN #3,"LP"
4010 RANDOMIZE USR H: POKE 16092,0: RANDOMIZE USR H: POKE 16090,132: REM 132 columns
4015 INPUT "Left Margin?"''R
4030 RANDOMIZE USR H: POKE 16094,R: LPRINT : REM  MARGIN
4035 OUT 127,27: OUT 127,20: REM Condensed style/font
4040 INPUT "Start printing with #"''Y''End printing with #"''Z
4045 FOR N=Y TO Z: LPRINT 0$(N): NEXT N
4050 RANDOMIZE USR H: CLOSE #3: RETURN
8000 CLS : REM --------===( SHELL SORT )===------
8005 PRINT AT VAL "10",VAL "12";"STANDBY";AT VAL "13",VAL "10"; FLASH SGN PI;"  SORTING  "
8010 LET S=1
8020 LET S=S*2
8030 IF S<=J THEN  GO TO 8020
8040 LET S=INT (S/2)
8050 IF S=0 THEN  BEEP 1,30: RETURN
8060 FOR T=1 TO J-S
8070 LET Y=T
8080 LET W=Y+S
8090 IF 0$(Y)<=0$(W) THEN  GO TO 8150
8100 LET Z$=0$(Y)
8110 LET 0$(Y)=0$(W)
8120 LET 0$(W)=Z$
8130 LET Y=Y-S
8140 IF Y>0 THEN  GO TO 8080
8150 NEXT T
8160 GO TO 8040
9000 RANDOMIZE USR H: SAVE "DBSMPL.BZ" LINE 10
9010 RANDOMIZE USR H: LOAD "L.B1"
```





The Program (KEEPING RECORDS Cont.)

Line 5 declares DIM(1000,32), 32K bytes, which can be any product not exceeding the memory available such as DIM(200,64) or DIM(250,4,32) for 4 lines address book.

Lines 12 to 195 are for the Menu setup and Selection. A chirp sound is provided by line 12 and FREE memory is provided by line 65.

Lines 230 to 380 are for ENTERing the records. Up to 32 characters long entries can be made in this case, but can be rewritten for other lengths.

Lines 630 to 655 list the records starting with the record number INPUTed to the end of the file.

Lines 720 to 780 search for a match at the beginning of each record of the three characters INPUTed and lists them to the screen.

Lines 890 to 970 search for a match in every record of the character(s) INPUTed and lists them to the screen.

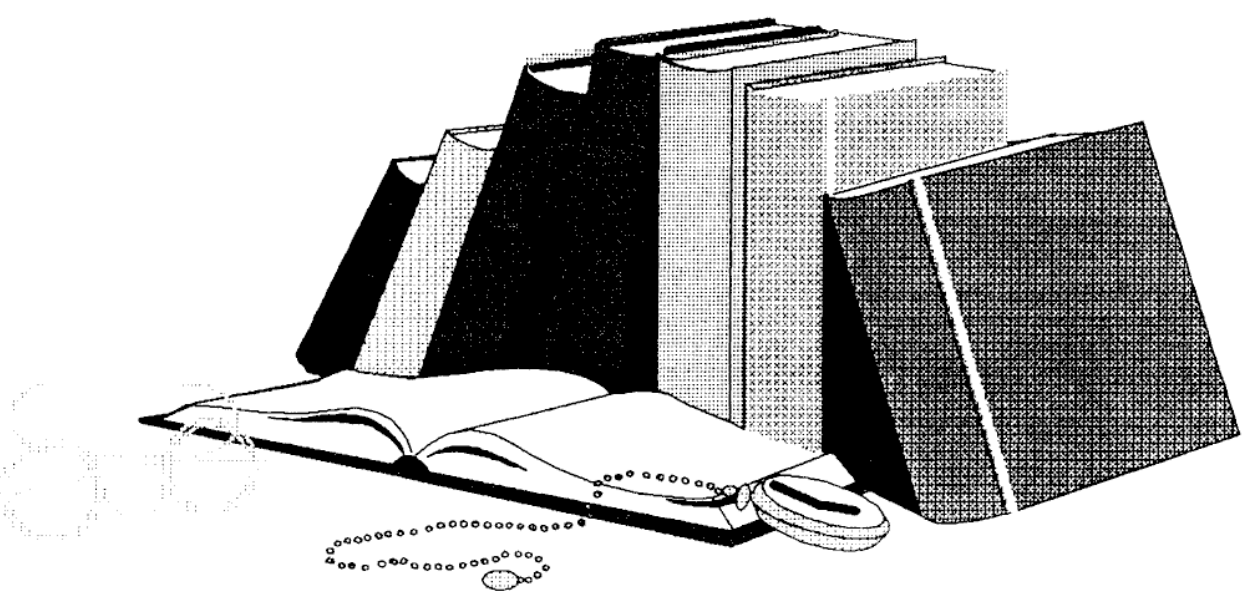
Lines 1000 to 1025 delete any empty record cell that becomes record #1 after the SORT routine is completed.

Lines 3000 to 3040 prints to the screen the record to be corrected and provides INPUT for the correct record.

Lines 4000 to 4050 are for printing to a large printer using the LarKen disk interface to set the margin and 132 columns, also sets a Tandy DMP105 printer to print in condensed font. For a 2040 printer DELETE 4000,4035. Change line 4050 to 4050 RETURN.

Lines 8000 to 8160 sort routine by the first character of every record in this order:- Blanks/spaces, Numbers then Alphabets. When the sort is completed all blank records will be at the beginning of the list. To remove the blank records, use GO TO 1000.

For other than LarKen users, lines 180, 4000-4050, 9000, and 9010 will have to be rewritten accordingly.



2068 DISPLAY BLOCK-MOVES

Bob Hartung, 2416 No. County Line Rd E., Huntertown, IN 46748

In the Z80 microprocessor used in the 2068 is a command called LDIR that may be used to quickly move defined blocks of data from one RAM location to another. The routine listed below moves all or portions of the screen display (DFILE1) to RAM address 30000 from which it may then be moved back to the display file.

Because of the manner in which pixels and attributes are addressed in DFILE1, the simplest way to define a block to be moved is either the whole DFILE1 file, or the top, middle, or bottom third of the file. A pixel-by-pixel or line-by-line block-move requires much more complex definitions.

Some uses for this technique might be to insert text or graphics into a menu or to do animated displays. While the number of such displays stored in RAM is limited, many more may be saved to disk. This is a revision of an original article I wrote for the May-June 1985 SyncWare News.

BLOCK-MOVE LISTING

```
  1 CLEAR 29999
 10 PRINT "0 - Load SCRN displa
y file"'"1 - Full-screen store"'
"2 - Top screen store"'"3 - Midd
le screen store"'"4 - Bottom scr
een store"
 20 PAUSE 0: LET k$=INKEY$: IF
k$="" THEN GO TO 20
 30 IF k$="0" THEN CLS : LOAD /
"SCRN"CODE : PRINT #0;"Any key t
o continue": PAUSE 0: RUN
 40 IF k$="1" THEN LET STP=1638
4: LET INS=INT (STP/256): LET NO
B=6192: LET INB=INT (NOB/256): G
O TO 80
 50 IF k$="2" THEN LET STP=1638
4: LET INS=INT (STP/256): LET NO
B=2048: LET INB=INT (NOB/256): G
O TO 80
 60 IF k$="3" THEN LET STP=1638
4+2048: LET INS=INT (STP/256): L
ET NOB=2048: LET INB=INT (NOB/25
6): GO TO 80
 70 IF k$="4" THEN LET STP=1638
4+4096: LET INS=INT (STP/256): L
ET NOB=2096: LET INB=INT (NOB/25
6)
 80 CLS : REM Create screen-fil
 90 FOR n=1 TO 704: PRINT "■";:
NEXT n
 100 FOR n=0 TO 21: PRINT AT n,0
;n: NEXT n
 110 REM Defines selected lines/
cols and copies from DFILE1 to R
AM
 120 POKE 65356,1: REM LD BC,no.
of bytes to move
 130 POKE 65357,NOB-(256*INB): R
EM n LSB
 140 POKE 65358,INB: REM n MSB
 150 POKE 65359,17: REM LD DE,de
stination address 30000
 160 POKE 65360,48: REM n LSB
 170 POKE 65361,117: REM n MSB
 180 POKE 65362,33: REM LD HL,so
urce address
 190 POKE 65363,STP-(256*INS): R
EM n LSB
 200 POKE 65364,INS: REM n MSB
 210 POKE 65365,237: REM ED pref
ix
 220 POKE 65366,176: REM LDIR bl
ock-move
 230 POKE 65367,201: REM RETurn
 240 RANDOMIZE USR 65356: REM Ca
ll block-move routine
 250 PRINT #0;AT 1,0;"Any key to
continue": PAUSE 0
 260 REM Moves RAM data to DFILE
1
 270 CLS
 280 POKE 65357,NOB-(INB*256): R
EM LSB no. bytes
 290 POKE 65358,INB: REM MSB no.
bytes
 300 POKE 65360,STP-(256*INS): R
EM LSB dest
 310 POKE 65361,INS: REM MSB des
t
 320 POKE 65363,48: REM LSB sour
ce in RAM (30000)
 330 POKE 65364,117: REM MSB sou
rce in RAM (30000)
 340 RANDOMIZE USR 65356
 350 PRINT #0;"Key 5 to save or
m for menu"
 360 PAUSE 0: IF INKEY$="5" THEN
 PRINT #0;AT 0,0,,,,: GO TO 9998
 370 RUN
9997 SAVE /"SCRNmove" LINE 1: ST
OP
9998 SAVE /"SCRN"CODE STP,NOB
9999 RUN
```

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Jun. 1993 revisions of the Library added 1 new disk and files to 7 other disks.
Apr. 1993 revisions of the Library added 4 new disks and files to 2 other disks.

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GUIDE	(Archive based Library Guides)	Jun 93	882
C.A.D_1	(Computer Aided Design)		312
CT_1	(Communications/Transfer)	revised Nov 91	309
CT_2	(a BBS program)	revised Nov 91	429
DEMO_1		New Apr 93	6
DEMO_2		New Apr 93	60
DEMO_3		revised Jun 93	168
DEMO_4		revised Jun 93	111
DEMO_5		New Jun 93	285
DEMO_7		New Aug 93	33
DEMO_8		New Aug 93	1119
DEMO_9		New Aug 93	90
EDUC_1	(EDUCational)	revised Nov 90	345
EMACS_1	(Micro EMACS V3.9p SOURCE FILES)	Dec 92	3
EMACS_2	(Run version. NON-SOURCE + new doc's)		18
GG_1	(General Games)		222
GG_2		revised Jun 93	207
GG_3		revised Dec 92	675
GS_1	(Games advent/Strategy)		108
GS_2			105
GS_3			75
GS_4		revised Feb 92	468
GS_5		New.Aug 93	759
GS_6		New.Aug 93	246
GRAF_1	(Graphics programs)		231
GRAF_2		revised Jun 93	342
GRAF_3		New Aug 93	198
KERMIT_1	(Kermit for the QL)		99
KERMIT_2			825
KERMIT_3			354
LANG_1	(Forth, C, etc)	revised.Jan 92	138
MAND_1	(MANDELbrot programs)	revised Nov 90	138
MAND_2		New Nov 90	12
MAND_3		New Nov 92	9
MATHS_1	(Maths, etc)		186
MATHS_2		revised Jun 92	678

Disk Name	Contents		Free Sectors
MD_1	(Misc & Demonstration)	revised Aug 93	525
MD_2		New Nov 90	87
MD_3		revised Aug 93	324
PAGE_DES	(Version 1)		60
PF_1	(Printer utilities & Fonts)		243
PF_2			222
PF_3		revised Aug 93	111
PSION_1	(PSION utilities etc)		144
PSION_2		revised Aug 93	96
PSION_3		revised Nov 92	201
PSION_4		revised Nov 92	588
QDJM_3	(revised QDJM_1)		45
QDJM_4	(revised QDJM_2)		225
QDJS_1	(JS ROM)		459
SP_0	(Reserved - T. TEBBY + TRAPS ONLY)		1032
SP_1	(Specialist programs)		255
SP_2		revised Jan 92	18
SP_3		revised Apr 93	159
SP_4		New Nov 90	315
SP_5		New Nov 91	330
SP_6		New Jun 92	960
SP_7		revised Aug 93	102
SP_8		New Aug 93	198
SP_10		New Aug 93	0
UD_1	(Dir & copy Utilities)	revised Feb 92	546
UG_1	(General Utilities)		144
UG_2		revised Nov 90	96
UG_3		revised Feb 92	162
UG_4		revised Jun 92	309
UG_5		New Nov 92	75
UG_6		revised Jun 93	273
UG_7		New Aug 93	1095
UG_8		New Aug 93	825
UT_1	(ToolKits/MachineCode)		201
UT_2		revised Aug 93	411

QUANTA members may get any of these disks by sending a formatted disk for each disk requested, enough funds to cover return postage, and proof of membership to the U.S. Sub-Librarian. If you wish, I can provide disks at a cost of $.50 per disk. Order 3 or more disks and postage is free. Of course, any questions, you may call 1-317-291-6002.

Paul Holmgren, 5231 Wilton Wood Ct., Indianapolis, IN. 46254

QUANTA

QL Users And Tinkerers Association - Independent QL/Thor Users Group

* Worldwide Membership * Sub-Groups * Advice * Back-Up * Monthly Newsletter *
*Extensive Library of (mostly FREE) Programs *

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PRO/FILE - ON THE QL

by *Kenton Garrett*

Database Pro/File does not need any introduction to the Sinclair enthusiasts here in the USA. It was the most popular program of our Timex/Sinclair 1000 (ZX-81) and T/S 2068 (Spectrum) computer youth.

Unfortunately Pro/File was never converted to QL use; but it has been Upgraded, Renamed And Rewritten In MSDos & Atari.

PC-FINDEX 5.0 is the latest upgrade Dos version; and yes, thanks to the Gold Card & PC Conqueror - It Does Effectively Emulate On The QL! Best of all Findex is still the same Average User Database Concept that was the hallmark of Pro/File's success.

Findex is unique in that it is completely unfettered - no fields sub-fields or restrictive pre-design requirements; and yet it is a powerful program, designed to permit the inexperienced user to easily and effectively create any type of database desired.

When using Conqueror with DRDOS it is necessary to add, "Command Com", to Findex. Easiest way, is to add the "/S" Switch to your normal Format Command - when Formating a blank disk, to make the back up (working) copy of Findex. The "/S" Switch instructs the QL to Automatically Add "Command Com" during the formating process. (Reference Pages 240-244 DRDOS 6.0 User Guide)

Eg: With ED Drives And A 3 1/2" Double Sided/Double Density Disk The Format Command Would Be **Format B:/F:720/S**. The Step By Step Procedure Is:

1. Load PC-Conqueror From Drive "A".

2. Load Your DRDOS Operating System Disk From Drive "A"

3. **Leave The DRDOS Disk In Drive "A"** And Put An Unformatted Disk In Drive "B." **Type Your Normal "B" Drive Format Command** WITH ADDITION OF THE "/S" SWITCH.

If interested - Tom Woods, author of FINDEX, advises to contact:

The E. Arthur Brown Company
3470 Pawnee Drive
Alexandria, Minnesota 56308
USA

Phone (Area 612) 762-8847
Fax # (Area 612) 763-4310
Cost: $49.95 + $3.95 Shipping
Visa & Master Card Accepted

Shipping Cost For Overseas Orders May Be Slightly Higher.

RMG UPDATE NEWS FOR JULY 1993

VOLUME 5 NUMBER 7

We would like to hear from you! If you have something that you think we or our readers would be interested in hearing about, please call or write! We will pass it on!

** RMG NEWS **

Well, we are finally moved and are starting to get settled into our new location. We are frantically trying to locate all of our inventory items, take a count and start filling orders as soon as we can. Some of you should see your orders arriving very soon if they have not already done so. Those who have not heard from RMG regarding a letter, request or order that you mailed after the first of April, please do not dispair, we will get to it soon!

Some of you may have noticed by now, this little newsletter is now going to be carried as a regular feature in THE PLOTTER to replace the long-running BITS & BYTES column that I have been writing for many years. It makes more sense, as I was writing this news page and then virtually retyping it into the BITS & BYTES format anyway. Let us know what you think. We are not after free advertising, but we can use the exposure.

Did you get last month's mailing? If not, or, if you are new to RMG UPDATE NEWS, please make sure that you have the following new addresses in your records:

RMG ENTERPRISES
14784 SOUTH QUAIL GROVE CIRCLE
OREGON CITY, OR 97045 TELEPHONE HOURS: 8AM-6PM PT TUE-SAT

CCATS
14784 SOUTH QUAIL GROVE CIRCLE
OREGON CITY, OR 97045

*** BEST OF THE PLOTTER NEWS ***

We are still working! It is a slow process and we only have a very few people working on the project and these only for a couple of hours per month. Almost all of the section pages are completed and we are looking forward to getting into the assembly process soon. At that point, we will be getting close to finishing and we certainly hope that this happens before year's end!

KEEP WATCHIN' FOR MORE NEWS!

Rod Gowen, Owner, RMG Enterprises
14784 South Quail Grove Circle, Oregon City, OR 97045
503/655-7484 8AM-6PM PT * FAX: 503/655-4116 24 HRS

CABLE COLUMN

By Bill Cable

ARCHIVE SERIES
PART 14 : ENTERING PROCEDURES USING THE ARCHIVE PROGRAM EDITOR - THIRD GROUP

We are starting to build a large program now. This time I am introducing several new procedures to our basic user interface procedures now saved as group2_prg. We will call this new set which includes all of our group2 plus the new procedures - group3. I am not being specific about what kind of program we are ultimately making because I haven't made up my mind yet. The procedures we are adding this time are still of a general nature and will be useful in many situations. Feel free to contact me if you have a request for a particular kind of ARCHIVE program to be developed in this column.

PREPARATION

Start ARCHIVE in your customary way so you see the ARCHIVE command prompt (>). You will load the group of procedures entered last time and saved in a file called "group2". Then we will start the editor and begin entering the first new procedure called "close_all". You will continue entering the rest of the procedures plus 2 testing procedures called "test2" and "test3" to illustrate how the new procedures can be used.

If you make a mistake while entering the listing below the editor may not accept the line and you will have to spot the mistake and correct it (like unmatched quotes). Also the indention's should match the listing if there are no mistakes. Type in as much as you wish at one time and exit the editor and save the file with the name group3 and save a second copy somewhere else. Remember to load group3 when you are ready to continue your work. Test2 illustrates the directory related procedures and test3 illustrates the field_display procedure used with the by_arrow procedure entered last time. This allows us to access a particular field of a database using the arrow keys or the first letter of the field name. Most likely you will have mistakes to find (debug). The basic steps are :

load "{}group2"<ENTER>	Load previous work {}=device
edit<ENTER>	Start editor
<F3>n	New procedure
close_all<ENTER>	New procedure name
{enter line of close_all listed below}	
<ESC>	Exit adding new procedure
<F3>n	New procedure
dcopy,i$,j$<ENTER>	New procedure name-
{enter line of dcopy listed below}	
..... and so on	
<ESC> <ESC>	Exit adding and editor
save "{}group3 <ENTER>	Save work {}=device
test2<ENTER>	Try test2 procedure (play)
test3<ENTER>	Try test3 procedure (play)

LISTING OF NEW PROCEDURES TO MAKE GROUP3

```
proc close_all
 while 1: close : endall
 endproc
proc dcopy;i$,j$
 msg;23,"copying "+i$+" to "+j$: backup i$ as j$
 endproc
proc device;i,i$
 print at i,0;"For "+i$; tab 80; at i+1,1;rv$;
 print " Use : Flp1_  Flp2_  Ram1_  Ram2_  Mdv1_  Mdv2_  Other  eXit ";rv$;tab 80;
 by_arrow;i+1,1,8,8,8,"FFRRMMOX",8: if ans=1: let ans$="flp1_"
  else : if ans=2: let ans$="flp2_": else : if ans=3: let ans$="ram1_"
    else : if ans=4: let ans$="ram2_": else : if ans=5: let ans$="mdv1_"
      else : if ans=6: let ans$="mdv2_"
        else : if ans=7:inpy;i+1," Name the device": else : let ans$=""
          endif : endif : endif : endif : endif : endif : endif
 endproc
proc directory
 device;22,"Directory": if ans$="": return : endif : let d$=ans$
 while 1: dir d$: print at 23,1;rv$;" Directory of ";d$;
  print tab 22;" :  Copy     deLete     Directory  eXit ";rv$; tab 79;
  by_arrow;23,1,25,4,12,"CLDX",4: if ans=0 or ans=4: return
   else : if ans=1: print at 23,1;rv$; tab 79; at 23,1;" Copy ";d$;
    input f$;: print rv$;:device;22,"device to copy "+d$+f$+" to"
    liny;22: if ans$<>"": let e$=ans$
     print at 23,1;rv$; tab 79; at 23,1;" Copy ";d$;f$;" to ";e$;: input g$;: print rv$;
     if g$="": let g$=f$: print rv$;g$;rv$;: endif
```

```
        error dcopy;d$+f$,e$+g$
        if errnum()=21:yorn;23,e$+g$+" already exists. Overwrite"
          if ans$="y":dkill;e$+g$: error dcopy;d$+f$,e$+g$: endif : endif
        if errnum(): acky;23,"Copy failed. Err No = "+str(errnum(),2,0): endif: endif : let ans=0
      else : if ans=2: print at 23,1;rv$; tab 79; at 23,1;"Delete : ";d$;
        input h$;: print rv$;:  if h$<>"": error dkill;d$+h$: endif : let ans=0
        else : if ans=3:directory: return: endif : endif : endif : endif : endwhile
  endproc
proc dkill;i$
  msg;23,"deleting "+i$: kill i$
  endproc
proc erry;l,m$
  acky;l,"Error "+str(errnum(),2,0)+" while "+m$
  endproc
proc field_display;l$,sl,nl,sc,nc,bw,fw
  let n=0: let al=sl: let ac=sc: let cc=1: while n<numfld()
    let i$=fieldn(n,l$): if len(i$)>fw-2: let i$=i$(1 to fw-2): endif
    if len(i$)=1: let i$=upper(i$): else : let i$=upper(i$(1))+lower(i$(2 to len(i$))): endif
    print at al,ac;i$;: let n=n+1: let cc=cc+1
    if cc>nc: let ac=sc: let al=al+1: let cc=1: else : let ac=ac+bw: endif: endwhile
  endproc
proc looky;d$,l$
  msg;23,"look access of "+d$: look d$ logical l$:liny;23
  endproc
proc setup
  rem sets needed initial values ** must be run first **
  let rv$=chr(26): let hp=3: let hi=1: let sp=5: let si=1: let cs$=chr(27)+"B"
  let ke=1: let ke$=" KEY+ENTER "
  endproc
proc test2
  mode 0:setup:directory: mode 1
  endproc
proc test3
  mode 0:setup: error close_all
  let hd$="TEST TO DISPLAY FIELDS OF ANY ARCHIVE DATABASE":heady;hd$
  device;4,"Device location of source database. eXit to stop"
  if ans$="": mode 1: stop : endif : let sd$=ans$: dir sd$
  inpy;23,"  File name of source database (with extension)": let sn$=ans$
  error looky;sd$+sn$,"s": if errnum():erry;23,"accessing "+sd$+sn$: test3: return : endif
  msg;23,"checking fields": let l=0: let a$="": while l<numfld()
    let i$=fieldn(l): let a$=a$+upper(i$(1)): let l=l+1: endwhile
  cls : print tab 30;"PICKING FIELDS of ";sd$+sn$: print rv$;cs$: let n=numfld()
  let i=20: if n<41: let j=2: let k=40: else : if n<61: let j=3: let k=26
     else : if n<81: let j=4: let k=20: else : if n<101: let j=5: let j=16
        else : if n<121: let j=6: let k=13: else : if n<141: let j=7: let k=11
           else :acky;23,"Too many fields to display":test: stop
           endif : endif : endif : endif : endif : endif
  field_display;"s",2,i,1,j,k,k: print rv$;
  let ans=1: while 1: print at 22,1; tab 22;"Move arrow to desired field"; tab 79;
    print at 23,1; tab 20;"<ENTER> to select or 0 to exit"; tab 79;
    by_arrow;2,i,0,j,k,a$,ans: if ans=0: mode 1: stop : endif
    if ans<=numfld():liny;22:acky;23,"You chose field "+fieldn(ans-1): endif: endwhile
  endproc
```

The procedure "setup" already existed so you need to alter it to match the new listing. To use "test3" you need a database to inspect. There is a small "bug" in by_arrow you may come across. Next time I will have more procedures. Feel free to contact me if you have problems. Until then, Happy Archiving!

QL CORNER

This summer I spent much of my time learning to use the many new features of XCHANGE and XCHANGE Quill. Some of us had expected an XCHANGE manual to surface somewhere so that we could use XCHANGE more efficiently. This never happened.

I decided to look closely at the five HELP files (those ending with an _hob extension) and decided to re-format them, select those files pertaining to the new commands and printing them out. After working with XCHANGE for several weeks, I added some text to the file I call XCHNOTES. XCHNOTES_doc file is approximately seven (7) pages long and will do for now as a user's manual.

XCHANGE Quill, Archive, Easel and Abaçus are updated versions and seem to operate faster than the latest versions of the same named files. When in XCHANGE itself, multi-tasking with additional software isn't a problem. I now use XCHANGE instead of Taskmaster and multi-task The Editor S. E. without any problem.

The mail merge facility in XCHANGE Quill will allow the use of a Name and Address file from either Archive or Quill. So those of you out there who do not use Archive will find a simple _doc file adequate for use as a database. Incidentally, using this mail merge is a lot easier than using a mail merge from a separate Mail Merge program.

I can supply any reader of LIST with a copy of XCHNOTES_doc or XCHNOTES_txt and all five HELP files formatted as _txt and _doc files on disk provided you send me a formatted, 720K disk (either 5 1/4" or 3 1/2") in a suitable envelope so that it can be used for return to you and return postage which is usually 75 cents in stamps. If you need the XCHANGE program, send an additional formatted disk with enough return postage. I will send out the software the next day after receipt of your request.

If any QL user is still suffering from a QL overheating problem, I have on hand a small supply of the 2 Amp version of the 78C05 voltage regulator. (Original version is 1 AMP). The European's have used this fix for quite some time with good results. Here in the 'States' they were not available. If any one needs one, send me $3.00 and I will send you one, post paid.

Digital Precision has sent me the latest version of The Editor S. E. to review for IQLR. I've been using The Editor since 1987 and upgraded to the Special Edition in 1988. This is the only 'word processing' software that I need. At times I prepare manuals ranging from 20 pages to approximately 200 pages for some friends in the airlie entertainment industry. All pages are printed out back-to-back. The Editor SE handles this very well. Any control codes required (bold, double height-width, italics, letter quality, and so on) I embed directly into the text while proof reading. This can be done quite easily since The Editor has a special character set which, when used for control coding, the printer understands and follows through by printing out these commands correctly.

Those of you who use The Editor SE, and don't know whether you have the latest version or not (all SE versions are 2.05 regardless of the upgrade), look at the byte count for the XTRAS file. My original SE version of the XTRAS file indicates 5K 598 bytes; the newest version indicates 7K 268 bytes. There really aren't any new commands added, however many of the commands have been 'tweeked' or improved. The boot file now activates several Lightning files which are included on

the disk, for faster operation of the software. Digital Precision will upgrade The Editor SE for you for a slight fee.

Digital Precision has also upgraded PC CONQUEROR (PC emulator) to operate with more memory when using a Gold Card. This program is called PC Conqueror Gold Special Edition which allows the user with a Gold Card and ED disk drives (3.2 Meg) to get the most out of this PC emulator. I understand that this edition will also support hard drives.

Most of the new software being developed recently operates with Tony Tebby's Pointer Environment which is Mouse operated or with the QL cursor keys. If you are really interested in this type of software, search through the pages of IQLR, QL World, Updates or QUANTA.

There is an awful lot of activity within the QL Software and hardware area, with many software libraries available consisting of public domain and shareware on disks. I have approximately 125, 720K disks full of interesting programs. Just check the ads in QL World for further information.

QUANTA's library has grown by 'leaps and bounds' - I've lost track on just how many disks make up their library. I recently received four 720K disks from Bob Dyl, the East Coast Quanta librarian. The programs on these disks were compressed - The programs on the four original disks are now housed on 15 disks. Decompressing the programs are very easy. as it is menu driven.

If you don't subscribe to IQLR, QL World, Updates or Quanta and are still active with your QL, you should 'get the ball rolling', select one or more of these publications and PLEASE, subscribe.

International QL Report, 15 Kilburn Court, Newport, RI 02840, Telephone: 401-849-3805 EST 10:00 AM through 9:00 PM - $18.00 USA. Bob Dyl Publishes IQLR 6 times per year.

UPDATE Magazine, P. O. Box 1095, Peru, IN 46970, Tel:317-473-8031 Between 5:00 PM through 9:30 PM Standard Time during the week and noon to 6:00 PM on weekends. $18.00 US and and $22.00 outside US. Carol and Frank Davis publishes four times per year - supporting ALL Timex/Sinclair computers.

QL World Magazine, Archwind, The Blue Barn, Tew Lane, Wootton, Woodstock, Oxon, OX7 1HA, UK. USA & Canada '49.90 - Europe '32.90, Credit Cards accepted! Publishes 12 times per year.

QUANTA - a World-Wide-QL User Group, Membership Secretary: Bill Newell, 213 Manor Road, Benfleet, Essex, SS7 4JD UK Telephone:0268 754407. Publishes Quanta magazine 12 times per year and provides a vast software library which is free to all members.

Please...' byte the bullet'. Let the Magazine publishers know that all QL users in the US will support them so that they can continue to publish their periodicals. Without these publications, software and hardware manufacturers will stop producing their wares because they will not be able to advertise their products - then it will be time to say, Good Bye, QL!

See you next month....Bob Gilder

QLUSTer 5.105
by Al Feng

QLUSTer has recently undergone a long awaited upgrade which had been partially delayed by a year of voluntary service (servitude?) on the Eastern Navajo Reservation. As the version number would suggest, QLUSTer has undergone a significant change, the most important of which is easy access to already "made" sub-DIRectories structures.

QLUSTer requires that your QL have access to five SuperTOOLKIT2 keywords: WCOPY, WDELete, SPooL, RENAME, WSTATus.

Sub-DIRectories [... ->]

Access to the sub-DIRectories is performed by simply pressing the appropriate key designate as you might for an individual file. QLUSTer will determine that it is NOT a file, and go about the task of retrieving and displaying the sub-DIRectory.

The sub-DIRectory will be "in play" even if you change the device to a floppy which does not have a sub-DIRectory structure. The net result may be an empty page if no files exist with the appropriate DIRectory prefix.

Return to the main DIRectory via a SELECT_DEVICE option (press '0' to access).

If the disk you are using has sub-DIRectories, but your QL does not have not have a sub-DIRectory structure [i.e., " ->"], then QLUSTer will (at last attempt) simply access the first file in that sub-DIRectory. The subsequent files will not be accessible other than via WCOPY or WDELete.

Greater "crash" protection

Time away from Qomputing has helped me resolve the problem of my version of TURBO (2.00) implementing file type recognition. It is believed that the only reason QLUSTer will hang-up/crash now is if the EXECutable file is corrupt and does not load properly.

QLUSTer will also "ask" whether or not your printer is READY before it will attempt to send a file down the line.

Send comments/questions/queries to:

Al Feng
914 Rio Vista Circle
Albuquerque, NM 87105
U.S.A.

HAPPY TRAILS, AND COMPUTING, TO YOU ...

QLuMSi DOS v4.20
by Al Peng

QLuMSi DOS (QL.using.M'cr~S~ft.interface Disk Operating Simulation) has, as the version number might suggest, recently undergone a long awaited upgrade which had been partially delayed by my year of voluntary service (servitude?) on the Eastern Navajo Reservation.

Version 4 of the **QLuMSi** program has added the following commands:

**CD **
CD \[sub-DIRectory_prefix]
MD \[sub-DIRectory_prefix]
RD \[sub-DIRectory_prefix]

Most people with a QXL, GOLD CARD and FLP/RAM chip should welcome the ability to access sub-DIRectories.

The 'MD \' command (with a "sub-DIRectory_name") will initiate the MAKE_DIR commmand and MAKE a sub-DIRectory on the medium. For example (you may want to try this on a dupe of your master disk), at the prompt, input the following:

```
MD \FAST
```

When you input 'DIR' (presuming you have appropriate TK2_code) you should see:

```
FAST ->
```

in place of FAST_Disk and FAST_doc.

The 'CD \' command with a sub-DIRectory_prefix will access:

a) the sub-DIRectory on the medium; or,
b) any other valid prefix.

Thus, if you were now to input "CD \FAST" (after performing the above example), you would see:

```
A:\FAST\> _
```

Now, inputting "DIR" will show you the two files along with a data-file, e.g.:

```
FAST_Disk
      2758  1993 Sep 19 17:00:00
FAST_doc
      4096  1993 Sep 19 17:00:00
FAST_
        64  1993 Sep 19 17:00:00
```

The 'CD \' command (without a sub-DIRectory_prefix) is used to return to the main DIRectory.

The 'RD \' command (with a "sub-DIRectory_name") is used to REMOVE a sub-DIRectory from a medium.

NOTE: If you have several sub-DIRectories with similar "names" then you may be asked whether or not you wish to REMOVE them also, e.g.:

RD \LETTER

will prompt you if you wish to REMOVE the sub-DIRectory name LETTER as well as LETTERS (for example).

NOTE: If there are files in the sub-DIRectory, the sub-DIRectory will not be REMOVEd.

As before, those more familiar with the standard DOS commands may opt to utilize the smaller **COMMAND_COM** version of the program.

Both the "full" version of the **QLuMSi** program as well as *version 4* of the **COMMAND_COM** program require that your QL has the MAKE_DIR command available to it in addition to the traditional TK2_EXT code.

To accomodate those who either do not have a QXL, GOLD CARD, or FLP/RAM chip, a version of the new **QLuMSi** program has been included which does NOT require MAKE_DIR (hence, will not allow you to "MAKE (a sub-)DIRectory" on a medium. This is the **QLuMSi_COMn** program you will find on your master disk (use BOOT_ALT).

QLuMSi printing

In the current version, indicating the device as either COM or LPT still presumes SER. This may-or-may-not be an inconvenience for QXL users as my understanding is that some of the i/o drivers have not been written yet.

I will make necessary changes in the future as information becomes available to me.

Send comments/questions/queries to:

Al Feng
914 Rio Vista Circle SW
Albuquerque, NM 87105
U.S.A.

HAPPY TRAILS, AND COMPUTING, TO YOU ...

MECHANICAL AFFINITY

513 EAST MAIN ST.
PERU IN 46970
317 473 8031
FRANK DAVIS

OR

5231 WILTON WOOD CT
INDIANAPOLIS IN 46254
317 291 6002
PAUL HOLMGREN

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SPECIALS GOOD THRU DECEMBER, 1993

GOLD CARDS for the QL - This add-on card for the QL computer gives you 1920K of memory, Tool Kit 2, battery backed clock,16 MHz of speed, with 16 bit RAM and allows you to use upto 3 disk drives with your QL. The drives may be either double, quad, high or ED drives of 3 1/2 or 5 1/4. We also include the program "Slowgold" for no extra charge, and a 2 year warranty. Thru Christmas only $350.

Falkenberg HARD DRIVE INTERFACE for the QL - this kit includes the QL hard drive board, two slot adaptor for the Gold Card (adaptor for 5 slots available for the non-Gold $20 extra), an MFM or RLL hard drive controller, cable and documentation. This system will work with any RLL or MFM hard drive from 20 to 416 meg of storage space. All of this and postage included for only $315. We have some 40 meg MFM drives for only $100.

5 1/4 double sided double density disks -- 100 w/sleeves for $18.

QXL CARD for the IBM - This card has a 32 bit 68EC040 processor running at 20 MHz and we are offering them in 2 meg, 5 meg and 8 meg RAM sizes. The processor has access to its own RAM so performance is virtually independent of the host PC (so it could be an 8088 or 486, etc). Under the QXL your PC becomes purely an I/O system giving QL programs access to the PCs floppy disk, hard disk, keyboard, display, serial and parallel ports. The QXL has 2 QL style network ports to allow connection to a QL network. We offer these cards with a two year warranty, and will automatically send you free of charge software upgrades for the system. The operation is easy; install the card, insert the disk, and type "QXL" and your PC will appear to be a QL...a real upgrade. The price for the 2 meg is now $460; the 5 meg is $540; the 8 meg is $650. The lower meg ones can be easily upgraded by changing memory chips.

TEXT87PLUS4 Version 4 - This is the very latest version of this popular word processor for the QL. It now checks to see if you want to use the standard dictionary or add your own word list; the initial menu now includes the ability to IMPORT as an option; now before a file is saved all residues of aborted Typefaces are removed; dimensions and co-ordinates are now rounded off in Layouts (rounding off also takes place when you change the length unit; and now when you zap a document the text sections are retained, together with the rulers and layouts, thus giving you a complete skeleton document for adding text. These are only some of the enhancements in this new version. We are offering all of this for only $119. We also have 2488, the printer driver for 24 pin printers and bubblejets for only $29; the Typeset90 - deskjet driver for HP deskjet printers for $29; and Typeset90 - Epson Laser drivers for $59.

LINEDESIGN from PROGS - this is a vector drawing program which uses outline fonts and clipart , and allows you to move or resize text or art without losing any print quality. It comes on a ten disk set of the main program, plus many fonts and clipart. It can be mouse controlled and gets even better the more memory you have. The price is $149.

PROGRAM TAPE SPECIAL FOR THE TS2068 AND TS1000 - 4 program tapes, our choice and all different, for $3 and this includes postage. Get 6 tapes for only $4. These are all commercial programs and only 300 available.

128K RAM CARTRIDGE FOR THE Z88 for only $40.

QL TIDBITS AND TIPS SINCE THE LAST ISSUE by *E. P. WANNUM*

There comes a time when enough people (not just my counseling clients) have asked enough questions about QLs and related items that I feel I need to share what I have found out with the rest of you. I have not been able to get good answers to all of the questions asked, but I will relay those I can answer or get answers from Frank or Paul on. I should at this point mention to all of our readers, that I will offer help when and where I can, if it does not take a large amount of time. I know that the best place to get answers is often the dealers, but always remember this one point:: **IS IT FAIR TO ASK A DEALER YOU HAVE NOT DONE BUSINESS WITH TO ANSWER QUESTIONS ABOUT HOW TO SET UP OR USE THE SOFTWARE THAT YOU PURCHASED ELSEWHERE? YOU ARE ASKING THIS DEALER TO SPEND HIS TIME TO ANSWER QUESTIONS FOR SOMEONE WHO DOES NOT EVEN BOTHER TO BUY FROM HIM.** I have talked to three dealers recently who have reported this as a growing problem, being inundated by people who have purchased products from outside of North America, and then expect the North American dealer to take his time to show them how to get it to work. Most reason that it is cheaper to call or write here than overseas.

I at one time did most of my purchases from overseas, and sent repairs to be done over there. The service was good, but I decided that this sort of thing would kill off the few dealers and repair facilities we had here, so I changed my ways. In North America we have A.F.R. Software still here; RMG Enterprises, Dan Elliott's excellent repair facility, Mechanical Affinity, Wood and Wind Computing to name the ones that first come to mind. Give them the business if you want support from them, and they will all try to do right by you. It might even help the balance of trade for us by keeping the mailing costs and small bit of profit here in our hemisphere, rather than elsewhere. As many of you have realized by now, Canada and the USA have definite ideas about how to play fair in business, but some countries seem to scoff at such old fashioned ideas as a level playing field. This has hurt the economy of North America. I do my bit by buying here when I can, and avoiding those who are the worst offenders, such as Korea, Japan, China, and France. Most of what we get for our QLs and Z88s has to come from England, Belgium, Denmark and Germany, who are fortunately playing a bit more fair than the other mentioned countries.

I do not believe I have made such a strong economical-political statement since my days as a college student. I will only say it this one time. End of subject.

Now for the technical end of things. Frank got a letter from a user recently wanting to know about using the serial printer with the Miracle QXL card. You need to use COMS 1 to be able to use the serial printer on mine. This may already have been updated and made easier by the time you read this, as Miracle has been working very hard to finish all the drivers, etc. for the QXL card.

Another QXL question that has come up is how to change the 2 meg version of the card to a 5meg or 8 meg version. It can be easily done by those with some electronic hobby experience, or lacking that take the purchased chips and card to your nearest electronics repair shop, along with this article. To go from 2 meg to 5 meg: Swap 8 of the DRAMS, by swapping every other one with the new ones starting with the one nearest the bracket. To go from 2 meg to 8 meg you need to replace all of the chips. They are ZIPPS and should be 80 nanoseconds or better. I replaced the ones in mine with ones that were 60 nanoseconds and it works great. Some software has already been updated to take advantage of this large amount of RAM, and the facilities for QL users who want to put these cards on an IBM compatible, and I am looking forward to more such improvements.

Al Feng wrote to Frank that the Keyboard 90 Interface he got from Mechanical Affinity to use with a ZEOS RS keyboard and his QL, had some keys not properly working. He had lost some functions, such as the back-slash and the vertical line and finding the tilde and the pound *sterling sign* being the resulting output. The answer should be the following: a) *shift vertical line equals back-slash b)*

above TAB, next to the 1 key is where you should find the back-slash key. This does not seem to be ROM dependent, just the wiring setup for the Keyboard 90 Interface. It is a nice setup once you get used to a few small quirks like this.

Anyone out there who has tried or wanted to get the new program LINEDESIGN, but were put off because you were using a Canon BJ10E and thought it would not work with that, let either PROGS or MECHANICAL AFFINITY know and they will get you a driver that will work with it. This is a program that appears to have great potential, and I expect to see some newer versions come out over the next year or so, to which the upgrades will probably be free or lowcost (this may not be the case in a major upgrade version, it may cost a small amount at least). As the program is right now it is the best in its category. Some of the fonts on a 9 pin printer are not quite as good as some in Text87Plus4, but with a Bubblejet or Deskjet or even a Laser printer they are magnificent. The way PROGS has done upgrades in the past it would be best to get one of the versions, and upgrade later. When a major change comes out, it may cost more than the combined original program and upgrade cost. The fact that you can import Adobe Illustrator files to the program is quite a plus. Some folks have already had remarkable success adding new fonts to the program. What else can you say about a GL program that comes with manual and 10 disks.

To answer my own question an issue or two ago about using my Canon BJ10E with Text87Plus4, the new version with Software 87's new program Publishers Pack comes with two new extra items. One is an upgrade on Text87Plus4 (the program only costs $59 and is worth it)which contains many new enhancements to the program. The other new item is Fountext93, a new high resolution upgrade to Fountext88 which prints at 180 X 180 dots per inch on 24-pin and bubblejet printers. It also comes with ready-made-page-layout objects such as shadowed boxes that you can start preparing professional looking publications. Publishers Pack combined with LINEDESIGN combines the text editing and printing capabilities of Text87 with the graphics and font handling ability and power of Linedesign. The North American distributor for these is Mechanical Affinity. This can all be purchased together as Plus4 Publisher, and comprises the Plus4 wordprocessor, LINEDESIGN, and Publishers Pack for the price of 199 pounds sterling or $295 US$.

By the way I got Software 87's program 2488 to work for me and my bubblejet, it was a simple matter of having the correct setting on the little pins inside the printer. Experiment around with them and you will learn a bit about what pin settings on a printer can do. Make sure you write down what your original settings were so that you can reset it if needed. I use my bubblejet a lot when traveling, but at home and office I use my HP Deskjet Plus.

A tip for those using inkjet type printers that will improve your printouts, or originals used for photocopying. You will do best with inkjet paper. It is a special clay coated paper and helps keep the ink from smudging and appearing fuzzy. With this special paper you will get sharper printouts. /This also applies to the older Olivetti inkjet printers and color inkjets. If it is not available in your office supply store, ask them to order it for you. It costs more, but it is worth it for printing those things that you care about the appearance of.

Those of you who purchased a copy of SER Mouse over 6 months ago, if you have not got it up and running, should check with Jochen Mertz or Mechanical Affinity and get the latest version, with new manual. It is best to send a few dollars or german marks to cover the cost along with proof of purchase. The newer version seems much improved. I am still hearing from people who think it should work with non-pointer environment programs....not with out some reworking of those programs. If a program does not support a mouse or pointer environment, do not expect the mouse to do all you think a mouse should do. Programs are becoming more and more pointer environment friendly, but not all are there yet. Some of them may never be changed to that.

I have heard that Parker Lewis has found the same bug (or at least nuisance in Text87 I have found. When used with a nine pin printer, my old Seikosha, it will not give me any fonts that are simply double height. I would like to be able to use such when I use my older printer to do labels with.

Does anyone out there know how to do business cards with the Deskjet or Bubblejet? I can get sheets of blank single sheet business cards, but am not sure of how to either format, or program to use. EPW

SUPERBASIC DATA TYPES

Whenever we use variables in a SuperBasic program, we tell the SuperBasic interpreter what *type* of data it may hold in each variable. We don't necessarily do this deliberately as the system 'defaults' to a particular type. But what is a type and how do we take advantage of them?

It's all to do with data representation, if we're dealing with numbers in an accounting program, we're likely to want to use fairly large numbers which may optionally include a decimal point. If we were writing a program to look after the stock levels in our factory, we'd probably want to use whole numbers, and if we're writing an address book program, we want to deal with strings of characters. These are the three fundamental data types accepted and used by the SuperBasic interpreter.

The first type, numbers which may include decimal points and can take on extremely large values, is known as *floating point*. On the QL, floating point numbers have a range of in the region 10 to the power of ± 615.

The second data type, that comprising whole numbers, is known as the *integer* data type. On the QL, integers can be any whole number between 32768 and −32767

The last type, comprising of strings of characters, is known as the *string* data type, and strings can be from zero characters long (known as the *null string* ie, "") up as far as 32766 (NOT 32767!) characters long.

The reason for the existence of the three types is that different applications demand different kinds of data, and having to hold all data as one particular type would be very inefficient. QL SuperBasic variables are specified in terms of type by following the name of the variable with a special symbol. If there is no symbol, as in

variable

then the data type is floating point. As it is implied rather than specified, this is the type adopted by default.

Integer variables are introduced by following the name with a per cent sign, as in

variable%

and string variables are created by terminating the name in a dollar sign.

variable$

The SuperBasic interpreter exercises something known as *type coercion*, which means converting data from one type into another. For example, we may have a variable, *v*, which holds the number 23. As *v* has no special symbol at the end, it is a floating point variable. This means that its value, 23, is held as a floating point number inside the QL. Nevertheless, we can put the value into an integer variable

x%=v

because the value of *v* (23) also happens to be a valid value for an integer. The SuperBasic interpreter coerces the floating point representation of 23 into its integer representation before the value is placed into x%. This coercion is often very useful, as we don't need to check for operations such as the assignment above, and old BASIC functions such as STR$ and VAL are done away with. To see whether a coercion could be successful, we need only to consider the *generality* of each type. As a string variable can hold an arbitrary string of characters, and as all numbers may be written down as characters (and therefore stored as characters), it follows that a string variable can always be assigned a numeric value. The statement

v$=1234.56

will put the seven characters "1", "2", "3", "4", ".", "5" and "6" into the string variable *v$*. The value of 1234.56 (ie, the number 1234.56) will not be stored, simply its string representation. The string data type is therefore more general than numeric types such as floating point and integers.

Floating point is more general than integer, because every integer may also be represented as a floating point number. This makes the integer data type the least general and string type the most general.

There is a further data type accepted by the SuperBasic interpreter, called the *name* data type. This is used for procedure, variable and function names, and for file and device names. It is comprised of a string of characters, just like the string data type, but is slightly less general than string as not all strings are valid names. It is used whenever you specify a filename, as in

OPEN#3,mdv1_myfile

As you can see, the only difference between it and a normal string is that it is not surrounded in quote marks. It is perfectly permissable to add the quote marks, and thus turn it into a string, but it is generally less convenient to do so. The name data type is a sub-branch or leaf of the string data type

UN-TYPED DATA

Occasionally you will come across instances of data which don't seem to have a type specified at all. Although you may think that this makes it default to the floating point type, this isn't quite true. Let's take a typical defined function:

```
1000  DEFine FuNction MYFUNC%(a,b)
1010  LOCal c,d$
1020  c=a INSTR b
1030  IF c=0 THEN d$='' ELSE d$='OKAY'
1040  RETurn LEN(d$)
1050  END DEFine
```

If we make a list of all the *identifiers* (names) in this function, we see *MYFUNC%, a, b, c, d$*. The function itself, *MYFUNC%*, is terminated in a % sign, which indicates that the function is typed. It returns an integer result. Likewise, the two local variables *c* and *d$* are typed; *c* is a floating point variable and *d$* is a string variable. What about the two formal parameters, *a* and *b*? No type is specified for them, yet they are used as string variables within the function.

This is another rule of the language followed by the SuperBasic interpreter: formal parameters to functions and procedures are un-typed, and the actual type is derived from the usage of the variables within the procedure or function. As we're using them as strings here, it doesn't matter what type the actual parameters are as string is the most general type. If we had used them as integers in the function, we'd get an 'Error in expression' error (or possibly 'Overflow') if the actual values of 'a' and 'b' could not be coerced into integers.

There is nothing to stop us specifying the types of the formal parameters within the function, as in

1000 DEFine FuNction MYFUNC%(a$,b$)

but as the interpreter still follows its own rules, the type we specify will be over-ridden by the type dictated by the usage.

The reason for having un-typed formal parameters is a little obscure, but as it makes little difference to the way we write programs it doesn't really matter. Some of SuperBasic's rules for typing DO affect us, though, and if we don't know about them it is very easy to get confused. The main point to watch is the 'flow of control' statements

SELect
REPeat
FOR

Each of these has a 'control variable' (or, more accurately, a control identifier) which is specified in the construct:

SELect ON var
REPeat *loop_1*
FOR *x*=0 TO 10

The important thing about these control variables is that in all three cases they MUST be floating point variables. We cannot have

SELect on var%

or

REPeat loop$

The annoying thing is that if we enter such an erroneous line into a program, the SuperBasic interpreter won't complain. Things will go wrong as soon as we run it, though, and the particular error generated may be extremely obscure. So watch out!

Kaiser
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QL CORNER

Great news for QL Users! Psion, UK has declared XCHANGE, a suite of four bundled programs, (Quill, Archive, Abacus and Easel) as public domain software. All QL and QDOS users can freely distribute copies among their groups for personal use. The version of XCHANGE being distributed is 3.90 which was rewritten and produced by Dansoft for the Thor computer (a QL in a PC case).

My understanding is that each of the five programs (Xchange, Quill, Archive, Abacus and Easel) have the latest upgrade which include additional commands.

The Xchange file is approximately 183K, which will only operate with disk systems as the file is too long to be placed on a microdrive cartridge.

Thanks to LIST member, Joe LaPunzina for providing me with a copy of Xchange.

The diskette has many files on it, which includes a disk editor, a file editor, a screen dump utility with many different printer drivers and _doc files.

Xchange provides a multitasking environment, has commands of its own; Set which allows the default data drive and Help file drive to be changed; Output which controls printing a document as a background task while you continue working on either of the four programs. TSL is another command which stands for Task Sequencing Language. Seeing this in action will astound you! There are a series of TSL files on the disk.

My advice is to load Xchange. When the Xchange screen appears, press CTRL/C, then F3, T. A prompt will appear on the command line; enter TUTOR and then press enter. A menu will appear at the top of the screen offering a tutorial for each of the Tasks (Quill, Archive, Abacus and Easel). Press the appropriate letter for the task and Xchange will load and run the tutorial file of your choice.

Quill has several new commands: Glossary which allows the user to designate a character to be used as a 'Macro'. Export, which will output the current file in memory to be printed to a file in ASCII, without any control characters attached (except carriage return). In other versions you could do the same thing when printing to a file instead of printing to a printer. However, when you choose this option the user had to remove the disk with the printer driver on it so as not to have any printer control characters embedded within the file.

There is a Mail Merge facility included within Quill and another command called Extract, which operates much like the copy command but will allow you to save blocks of text to a disk so that they may be merged into other documents.

If I have interested you in the Xchange suite, you can send me a formatted 720K disk (either 5 1/4" or 3 1/2" diskettte), with return postage (normally 75 cents for one disk) and encolsed in a decent envelope which can be used for the return mail, I will copy the entire disk for you and mail it back to you. I have a disk with the Xchange HELP files formatted into _doc files which makes life a lot easier when printed out on paper instead of reading the Help files on a screen. If you want these files include an additional formatted 720K disk - the postage for both disks usually runs at 90 cents. See you next month....Bob Gilder

T/SNUG Information

ZXir QLive Alive!

is the newsletter of T/SNUG, the Timex/Sinclair NorthAmerican User Groups, providing news and software support to the T/S community in at least four newsletters per year.

It is our goal to build and maintain a Public Domain software library and develop a list of available software for all T/S computers showing the source.

T/SNUG wishes to have one chairman from every T/S user group who will take charge of sending us their group's newsletter contents and other correspondence for inclusion in the ZQA! Newsletter.

We encourage your group to copy this newsletter and distribute it at regular meetings to all your members. If you cannot copy this newsletter, perhaps we can provide a disk with the articles on it.

You can keep T/SNUG alive for an annual contribution of $10 made payable to Abed Kahale. Send check to:-

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Articles Contributions

If you like to contribute an article to the Newsletter, upload a file to our BBS, call it TSNUG.ART. If you have an AD for the Newsletter, UPLOAD a file call it TSNUG.ADS. If you have news to post about your group, UPLOAD a file call it TSNUG.NWS

For help, contact the SYSOP by E-MAIL on the T/SNUG BBS, mail or phone:-

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STREAMWOOD IL 60107-1647
It is preferred that you call:-
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For software libraries, write or call the following Vice-Chairmen. When writing please enclose a LSASE .

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First Time Procedure For Your Z88

First Time Start Up:

Follow these instructions *only* when the Z88 has been without any power and must be fully reset and initialized. You should never have to follow these instructions more than once-- the first time you put batteries in the Z88. Thereafter, the Z88 provides plenty of backup internal power to let you change batteries without resetting the computer.

1. Install the batteries following the Battery Installation instructions below.
2. With a paper clip or fingernail file, press the small grey button on the left side of the Z88. It is in a small square hole next to the round hole for the AC adapter plug. The screen on the Z88 will stop fluttering and sparkling once the button has been pressed.
3. If the screen goes blank after pressing the button, turn the Z88 on by pressing both "**SHIFT**" keys at the same time.
4. Press the "□" key just to the left of the space bar, then press the "**S**" key. This brings up the CONTROL PANEL display.
5. Use the various arrow keys to move the small blinking cursor (black box) around in the panel until it is sitting on the "E" in the word "European". Then press the "**A**" key followed by the "**ENTER**" key.
6. Next, set the date and time by pressing the "□" key followed by the "T" key. To set the date, press the "→" key to move the cursor to the word "SET" and press the "**ENTER**" key. Type the date, but do **not** press the "ENTER" key when done. Instead, press the "↓" key to move to the time. Type in the time and press the "**ENTER**" key.
7. Press the "**ENTER**" key again to exit the Clock function.

AC Adapter Use:

Use a 6 volt adapter with a 300mA or 500mA current rating only. The polarity must be correct. The inside of the plug must be positive and the outside negative. Double check these three characteristics: voltage, current, and polarity, before connecting any AC Adapter to your Z88. This is especially true if you choose to use an adapter that lets you switch voltages or polarity.

Battery Installation:

Make sure you install all four AA batteries in the direction indicated. Insert one battery at each end of the tray. To insert the middle two, form them into a "V" shape with the legs in the tray and press down on the point of the "V" until the batteries seat themselves firmly. *Always* keep batteries in your Z88. This will protect your data even if you are using an AC adapter.

Using the American Dollar:

The spreadsheet application, PipeDream, assumes the British pound for currency. To change to the American dollar while in PipeDream, press the following keys in order: "<>" (above the left SHIFT key), "**O**" (oh), "**ENTER**" (press twelve times), "**$**", "→", "**DEL**", "**ESC**".

Using CompuServe, America's Computer Utility:

Make sure that you set the Z88 up with the correct protocol for the baud rate you will be using. To do so, press the "□" key followed by the "S" key to get to the setup panel. In the right column are the communication parameters. Set the first two entries to the correct baud rate, set the third entry, Parity, to "S"pace and the last entry, Xon/Xoff, to "Y"es.

To dial using the terminal application, type the four letters "**ATDT**" followed by the phone number and press "**ENTER**". (If calling from a rotary dial phone, the first four keys to press are "**ATDP**".)

While communicating with Compuserve, there is a tendency for the information to scroll off the screen. To prevent this, once you are in the service, keep your left little finger resting on the "◇" key. With the index finger of the left hand, press "S" to Stop the screen from scrolling, and press the "Q" key to resume scrolling.

Until you are familiar with using the Z88 as a terminal, it is recommended that you always use the lowest baud rate your modem is capable of processing.

Using other Communication Services:

Most services are similar to Compuserve. Besides the above instructions, make sure you follow the procedures laid down by the particular provider you are communicating with.

If the Screen is Hard to Read:

On the left edge of your Z88 is a knob for brightening the screen and making the letters darker and more easy to see. Packaging the Z88 tends to rub the knob toward the lightest setting. To brighten the screen, adjust the knob until the letters can be read comfortably. The best setting is just before the entire screen darkens. This provides the best contrast.

HELPWANTED / FOR SALE / ITEMS NEEDED

This area of each issue is reserved for any and all UPDATE subscribers who are either looking for help with a Sinclair related problem; have a Sinclair computer related item for sale, or computer peripheral; or are looking to purchase a computer item for their Sinclair. It has been fairly successful. Those who have entered ads before (and let me know the results) show that better than 50% of those who put in their FREE ad get what they are looking for. So...send me your personal ads. You just might make some money or find the item or help you want. This offer is open to active paid up subscribers to UPDATE only, as a free ad. You may do one for each issue. This is not meant to replace or be used for commercial ads of a vendor.

(1) FOR SALE: Olivetti Inkjet Cartridges for the PR2300. These are not easy to get. I have a few dozen altogether for sale, at $6.00 a box, or two for $11.00. Each box contains four inkjet cartridges. The price from Olivetti for these is $13.00 per box, so this is quite a savings. Also for sale, an Aerco Disk Interface for the TS2068, with 64K of extra RAM on it, with docs for only $85.00. Also a TS1000 in a nice, full size keyboard case for $35. All of these items include postage. Make checks out to "UPDATE Magazine". If necessary call and talk to Frank Davis evenings to check on availability. Update Magazine, P.O. Box 1095, Peru, IN 46970. Phone no. 317-473-8031.

(2) For Sale: USED QL MICRODRIVE CARTRIDGES, some with and without tabs, mixed, no choice. Four of these for $6.00, postage included within USA, otherwise include one more dollar for extra postage. Only a couple hundred of these available at this price. Paul Holmgren, 5231 Wilton Wood Court, Indianapolis, IN 46254, or call 317-291-6002 in the evenings or weekends. Make checks out to Paul Holmgren.

(3) Dr. (retired) D. H. Williamson, of 856 Robie Street, Halifax, Nova Scotia, B3H 3C1 Canada, writes and says "I have just started to use my TS2068, but desperately need advice and help to upgrade its capacity, and change from tape to disks and disks drives, increase memory. I am hopeful some good soul will put me on the right track, Frank." How about several of you readers out there contacting this reader and offering some help?

(4) I have a small request, for the last 10 years I have been trying to locate a copy of "The Complete ZX81 Disassembly by Dr. Ian Logan" but with no success. Perhaps one of the UPDATE subscribers has a copy they would be willing to sell to me. Charles G. (Chuck) Bothner, 137 East Shore Rd., Denville, NJ 07834. This is for use with my TS1000 as a hardware controller, and I need to modify the operating system. (editors note: perhaps if it can not be found for sale, then someone could maybe even photocopy it or loan it to Charles to photocopy in order to help this project along).

(5) FOR SALE: one FLP/RAM level2 chip for the Trump Card for $32.00, and 512K miracle EXPANDERAM for $75.00, or both for $100.00. Al Feng, PLATYPUS Software, 914 Rio Vista Circle SW, Albuquerque, NM 87105. Phone no. 505-943-8414.

(6) FOR SALE: one WAFADRIVE, needs to be used with Spectrum or Spectrum emulator and spectrum buss or twister board. Has two fast stringy floppy drives of approx. 128K each, word processor, extra memory wafers, parallel and serial port with parallel cable. This is a good system and a great way to add a serial port to your TS2068 or Spectrum. All of this for only $60.00 postage paid in USA, $3.00 extra for other countries. Make check out to Eliad Wannum or to UPDATE!, c/o UPDATE Magazine, P.O. Box 1095, Peru, IN 46970. Due to the fact that I am on the road a lot, check with Frank or Carol at UPDATE to see if it is still available, or call them at the UPDATE phone of 317-473-8031.

(7) HELP NEEDED: We need examples of good computer generated art, screen dumps, digitized, or screens converted from other non-Sinclair machines for use in future issues of UPDATE. Send either on disk, or good hard copy. Let us know if you need the original or disk returned. Send to Carol Davis -- Publisher, UPDATE Magazine, P.O. BOX 1095, Peru, IN 46970. Also interested in routines or programs to

convert graphics from non-Sinclair machines to use on a QL, Z88, or TS2068. We could use these here in our work with the magazine, and think that our readers would find these to be very useful.

(8) WANTED: Copy of instructions and software drivers for these (IBM) memory cards. 1) SixPakPlus by AST Research Inc. 2) Quadboard by Quadram Cor. 3) Memo-2000xt by Ram Bank ROC. 4) Mem-122 by Addonics Inc. Contact D. G. Smith, R. 415 Stone St., Johnstown, PA 15906. Ph. 814--535--6998

INFORMATION WANTED: Also from D. G. Smith, "What can you tell me about putting a standard RGB port inside the 2068? I have a copy of an article by Tim Stoddard for doing this (from Time Designs, I think), but someone said they thought there was another, maybe better, article or set of instructions. If you could, just point me in the right direction. Or is Tim's method about the best? If so, I will need the pin-outs for a standard RGB (CGA) connector. Tim used an 8 pin DIN connector."

(9) We received word too late that they are looking to have a Sinclair Fest near Toronto, Ontario in Canada. They were requesting through their Club newsletter for people to respond and tell them if they would be willing to go. It was too late for us to include this in this issue and meet the deadline they asked to hear from folks by. UPDATE Magazine and Mechanical Affinity will be going to this proposed show if they decide to have it, (sometime in July 1994), and we would like for all of our readers who would be interested in attending such a show to write or call up to Canada and show them some support. The Toronto area is a great place to both live and visit. I know because I used to live there before Carol and I were married (in fact we moved and lived there for awhile after we were first married). Send your replies to: Hugh H. Howie, 586 Oneida Dr., Burlington, Ont. Canada L7T 3V3. Things he wanted to know were a) would you like this to be a one or two day event? b) what traders/gurus would you like to see/meet? GIVE THESE FOLKS YOUR IDEAS AND SUPPORT.

SPECIAL NOTE ON UPDATE ISSUE DISKS

Some of the issue disks we have been offering have not been updated in awhile, or it has been awhile since we sold some of them. Starting with the next issue of UPDATE (the January issue), those which we have not had updated for some time, or had little or no response on selling will be dropped from our offerings. Some that appear headed in that direction are the ones by Bill Jones and Bill Pedersen, as they are not subject to updates any longer. Up until that time they are offered at $5.00 off of the prices they are listed for on the back pages. This also applies to the Cable and Hartung disks. We will also be dropping the Aerco disk offerings. I had several of you ask me to include Aerco disks, so I did, but no one ever ordered one. We will of course be replacing these with new disks. For this short time take advantage of this price reduction and get some good North American generated Sinclair software. Perhaps we could sell some Aerco software here if someone would submit it for us to give it a try. New stuff.

This issue we do have some titles that have been updated by Al Feng, and we have added another disk of good shareware and PD software for the QL to the QL Compendiom set. These prices remain the same. If you have purchased the compendiom and want the extra disk, just let us know and include $3 to cover the disk, mailer and postage costs. Also if you bought an earlier Al Feng program and want the updated version, send either the original disk and $2, or $3 and proof of purchase and we will send you the upgraded version.

Just a small reminder to those of you looking to have an issue disk in your name, we need first a write up suitable for publication on the program, and if possible (depending on size usually) a printout of the program ready to use in an issue or two. It is best if the docs are short to also have these available to print. We take care of making doc copies for the buyers, postage, packaging material, disks and the advertising. We offer the disks at a fair price and give you half the fund as a royalty, using our half to pay for the expenses. Write to the editor, Frank Davis if you are interested in becoming part of this program. We have had some that did fairly well, and others that did nothing, but you never know if you do not try!

24-PIN BIT IMAGE GRAPHICS
FOR 24-PIN OR BUBBLE JET PRINTERS IN EPSON EMULATION

Larry Crawford / 357 Reynolds Rd / London Ontario Canada N6K 2P8
(519) 657-9119 PUBLIC DOMAIN 12 Oct 93

If you went for a 24-pin or bubble jet printer and had thoughts of trying to print some graphics in the 24-pin bit image mode, you were probably somewhat taken aback by the apparent comlexity of it all, just as I was.

This article should take some of the mystery out of the process. The demo program will give you the information needed to develop your own applications.

BACKGROUND

The 24 print head pins are arranged into three groups of eight. In effect, each group acts as a separate 8-pin head covering 1/3 of a print line. Thus, with one pass it is possible to achieve the vertical definition of three 8-pin passes with only one pass. Furthermore, it is possible to achieve a density of 360 dots per inch in Hex Density mode.

These attributes make the printing very fast and should allow a CAD program to produce printed circuit board layouts with good solid lines without the need for multiple passes. Unfortunately, the existing CAD programs that I have seen are all based on 72 dots per inch (dpi) horizontal density and 8/72" vertical line spacing. The 24-pin printer does not have the 72 dpi option. Instead, it uses multiples of 60 dpi and 1/360" paper feed. This makes the size of the printed image larger than that produced by an 8-pin printer.

Consequently, it cannot be used by software programs such as Pixel Print or CAD in their present form: a) two columns of 64 characters will not fit side by side on a page and b) the socket hole spacing on a pcb layout would be too great. It should be possible to modify the calculations performed by a CAD program to get the scale of the final image correct.

There are numerous other applications, of course, so feel free to make use of the information that follows.

As a demonstration, we will print the first line of the screen in 24-pin double density bit image graphics. The data in the conversion chart that follows is essential to the process.

Type in the following program (without the parenthetic comments, of course):

```
  5 REM 24-pin bit-image demo
 10 CLS: PRINT "QWERTYUIOPASDFGHJKLZXCVBNM123456"
    [this will put a single line on the screen to copy]
 20 IF IN 127<>236 THEN INPUT;: PRINT #0;"PUT PRINTER ON LINE":
    PAUSE 2: GO TO 20
    [An important reminder since the screen will go blank and
    nothing will happen if the printer is not ON.
    <INPUT;> is a simple way to clear out the bottom of the
    screen]
 30 RESTORE 30: GO SUB 500: DATA 27,65,8,999  [set Line Feed to
    8/60"]
 40 LET y=175: RESTORE 40: GO SUB 500: FOR x=0 to 255: DATA
    27,42,33,0,2,999  [y points to top of screen; codes are sent
```

```
    to set printer for 24-pin bit-image double density: it will
    expect 2x256 bytes of data: the x loop will point to all 256
    pixel columns across the screen]
 50 LET b1=224*POINT (x,y)+28*POINT (x,y-1)+3*POINT (x,y-2)
    ["b1" is the "top" byte. Following the chart, if the top 3
    pixels of the screen are INK then the value assigned to "b1"
    will be 224+28+3=255. Therefore, all top 8 pins of the print
    head will fire]
 60 LET b2=128*POINT (x,y-2)+112*POINT (x,y-3)+14*POINT (x,y-4)
    +POINT (x,y-5)
    ["b2" is the "middle" byte. Following the chart, if the
    pixels 3rd, 4th, 5th, & 6th from the top of the screen are
    all INK then "b2" is assigned a value of 128+112+14+1=255.
    Therefore, the middle 8 pins will all fire]
 70 LET b3=192*POINT (x,y-5)+56* POINT (x,y-6)+7*POINT (x,y-7)
    ["b3" is the bottom byte. Following the chart, if the pixels
    6th, 7th & 8th from the top of the screen are INK then "b3"
    will be assigned a value of 192+56+7=255. Therefore, the
    bottom 8 pins will all fire]
 80 RESTORE 80: GO SUB 500: NEXT x: DATA b1,b2,b3,b1,b2,b3,999
    [send the 3 bytes to the printer twice for double density]
 90 INPUT;: PRINT #0;x: NEXT x  [clears the bottom of the screen
    then prints the pixel column # to let you know that the
    computer is calculating the data bytes. Gets the next col #]
100 RESTORE 100: GO SUB 500: STOP: DATA 13,10,999
    [send CARRIAGE RETURN and Line Feed]
500 READ a: IF a=999 THEN RETURN
    [999 is a dummy value to signal the end of current data]
510 IF IN 127<>236 THEN GO TO 510  [if the printer is busy, wait
    until it is ready for data. (<INPUT;> is a simple way of
    clearing the bottom 2 lines of the screen)]
520 OUT 127,a: GO TO 500  [send data to the printer]
9999 RANDOMIZE USR 100: SAVE "l1dem.B1"
```

Now <GO TO 9999> to save it to disk and then <RUN>

It takes nearly a minute to get to the actual printing because of all the calculations to be done in BASIC.

If you want to print a whole screen, make the following changes:

LINE 10: Replace with: 10 LET ctr=0: RANDOMIZE USR 100: LOAD "screen name" SCREEN$
['ctr' will keep track of the print line being processed]

LINE 40: Replace <LET y=175> with <FOR y=175 TO 7 STEP -8: LET ctr=ctr+1:>
[This will set up a loop to deal with all 22 screen lines and increment the line counter]

LINE 90: Add <ctr;",";> immediately after <PRINT #0;>

LINE 100: Add <NEXT y:> immediately ahead of <STOP:>

LINE 9999: Change program name

LINEs 40 and 100 set up a loop to look at all 22 lines of the upper screen, outputting the data to the printer at the end of each line. A full screen takes over 20 minutes to copy.

To print out in triple density, change the data in line 30 to 27,42,39,0,3 and add another set of b1,b2,b3 to the data in line

80. The printer will then expect 3x256 bit image data bytes.

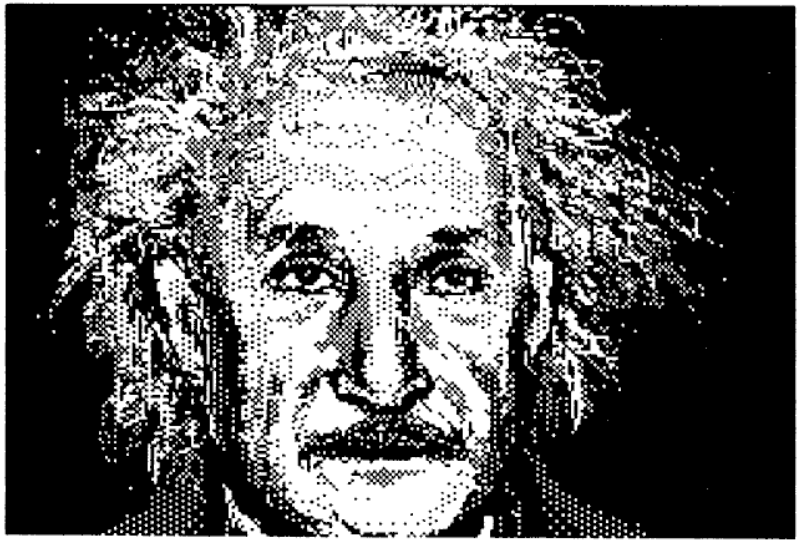
A much faster version gets the data from the screen file instead of the screen. It puts the data into 1 or 22 line files, ready to be loaded from disk then sent to the printer by a 205-byte m/c routine. It takes about 5 minutes to create and save the 22 files and less than one minute to print them all in triple density.

I will be happy to send you a copy of this utility on a 5-1/4" double sided floppy in either Oliger or LARKEN format for $5.00 cash or money order. Be sure to state which DOS.

A full screen produces an image 4.25" by 2.9" (10.8 by 7.4 mm) and is proportioned so that squares are square and circles are round. Different screen images can be printed consecutively on the same sheet so that a composite image can be 4.25" by any length.

8-PIN TO 24-PIN CONVERSION CHART
FOR A 24-PIN PRINTER WITH EPSON EMULATION

	8-PIN	24-PIN		
	PIN#	PIN#	CODE	
TOP (BIT 7)>	1	1		
		2	224	
		3		
	2	4		"TOP BYTE"
		5	28	
		6		
	3	7		
		8	3	
		1	128	
	4	2		
		3	112	
		4		"MIDDLE" BYTE
	5	5		
		6	14	
		7		
		8	1	
	6	1		
		2	192	
	7	3		
		4	56	"BOTTOM" BYTE
		5		
	8	6		
		7	7	
		8		



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Memory expansion

The Z-88 has an almost unprecedented array of options to expand its available memory. For the user new to computing or to the Z-88, there may seem a bewildering choice. Which is more suitable? With the chance of making a costly mistake, advice surely is needed.

RAM: The Z-88 has 32K of built-in RAM of which about 20K is usable. That means it can store 20,000 characters of information, which amounts to 3,000-4,000 words or roughly five pages of text. The RAM acts as everyday memory and the disc memory of a larger computer. It is by far the most versatile expansion and would be the most natural first choice for the majority of users.

The RAM may be expanded by adding extra packs which slot in the front. There are three slots, each of which can take up to 1MB of RAM but the largest pack available at the moment is 128K. So, in theory, one could have three 128K packs which together with the computer internal memory would give 404K. This, however, is not recommended for two reasons. The power drain of the three RAMS, especially the one in the third slot, would reduce battery life significantly. There would be no spare slots for any other kind of pack to be used.

Many users find 128K satisfactory; if you want much more immediately-available memory, Cambridge Computer is producing a 512K RAM pack in March.

Because of their nature, RAM packs cannot be removed from the Z-88 without losing their contents. RAM packs take extra current from the Z-88 batteries. A 128K pack in slot 1 or 2 will take about 15 percent more and, paradoxically, the 32K slightly more than that. The 512K will take the same as the 128K.

EPROM: The second type of pack the Z-88 can use is EPROM — Erasable Programmable Read Only Memory. They can only be used in slot 3 and are used for backing-up important data or programs from the Z-88 RAM. They will retain their data even if they are removed from the Z-88, so in addition to back-up they are also ideal for transfer of information between Z-88s.

There is one snag with EPROMs; data is effectively burnt on to then and cannot be erased selectively. When the EPROM is full, one must copy across important data to RAM and place the EPROM in an EPROM ERASER, which completely wipes it. It is them ready for filling again. Thus due to the nature of EPROMs, if you have a file on the EPROM you have altered, you must 'blow' an entirely new copy on to it — you can use the same name though, the old one becoming effectively useless until erased.

ROM: The third, and least common at the moment, kind of card is a ROM card. This would contain an external application, for example, a database or communications program. It would be integrated with the Z-88 operating system, so one could call it from the INDEX as if it were built-in; it would use the same Menu and Help system.

Technical note — What the Z-88 terms a ROM card may technically be a ROM or EPROM. The difference between that and a Z-88 EPROM lies in what has been programmed into its header, so that the Z-88 knows that it must run an ROM, and can save data on to an EPROM.

Rechargeable batteries with the Z-88

There is no fundamental reason why you cannot use rechargeable batteries with the Z-88, as many people have discovered, but there are two points you should take into account carefully before deciding to use them.

You will not get nearly 20 hours of life from them. This is because of the lower maximum voltage (5.2V) of ni-cad cells and the fact that, even when fully-charged, they contain less energy than alkaline cells.

The voltage against time graph for ni-cad cells tails off very quickly after a certain time, the upshot of this being that you could leave your seemingly healthy batteries in your Z-88 in sleep mode for a few days only to return and find them completely dead.

NEW! FOR THE CAMBRIDGE Z88

THE

DOUBLE WHAMMY

RAM & ROM UPGRADE

512K INTERNAL RAM & NEW V4.0 ROM, BOTH FITTED FOR JUST £99.90 INC. VAT.

THE SMALL PRINT: All inclusive price includes RAM upgrade to 512k internal, and installation of v4.0 ROM. Includes VAT @ 17.5% and return UK carriage. Overseas customers write for a quote to your country. Send JUST your Z88 (remove batteries & all expansion cards) in grey box in large Jiffy bag by REGISTERED POST (please no Parcel Post!) with cheque or credit card number & expiry date to :

Woodward Technology, P.O. Box 15, Belper, Derbyshire, DE56 0XE. Tel/Fax: 0773 828707.

QL SURVIVORS SOURCE BOOK

2ND EDITION -- This book contains worldwide lists of all QL BOOKS; PERIODICALS; BULLETIN BOARDS; USER GROUPS; HARDWARE and SOFTWARE DEALERS; PUBLIC DOMAIN and SHAREWARE SUPPLIERS. Nowhere else can you find all of this data in one easy to use source. This is a work of art by the same great folks that brought you IQLR, and offered by UPDATE Magazine. When we sell out of current stock it will be gone. It is now available for only $10.00 US$, and this now includes all postage and handling in the North and South American areas. Order now and it will be shipped to you by either First Class Mail or Priority Mail; no more waiting around for slow UPS delivery! Whatever it is you are looking to buy for your QL, this will tell you where to look for it, along with phone and fax numbers, as well as addresses.

Z88 SOURCE BOOK

This book was compiled by Tim Swenson and published by UPDATE Magazine, and was designed to be a good and concise reference book on the Z88; how to interface it with the rest of the worlds computers; what products are available for it and where to find them. It will not replace your Z88 user guide, but will instead supplement it, and fill in areas that were missing by putting all this information in one easy to use book. When you order it we also include a disk of utilities and programs that are discussed in the book. This is available in the following formats: QL in 3 1/2 1440 or 2880 sector disks; QL in 5 1/4 720 or 1440 sector disks; IBM 360K 5 1/4 disks; IBM 720K 5 1/4 disks; IBM 720K 3 1/2 disks; IBM 1.4 meg 3 1/2 disks. Please let us know with your order which type and size of disk you need. The price for all of this is $7.00 US$, which includes P. & H. in North America, and elsewhere $7.00 US$ plus $2.00 US$ for the additional postage we have to pay. We will accept for foreign orders the cash equivalent, plus 10% for conversion, if you are unable to obtain a money order or travelers check in US$. We want to make this information widely available, so we are trying to be as flexible as possible.

QL UPDATE ISSUE DISKS

These disks contain at least one major piece of software written specifically for disk drive and are guaranteed to be worth the money. The rest of the disks are filled with various utility programs taken from the issues of UPDATE and a few surprises thrown in. Half of the money goes to the author and is meant to encourage new programs for the QL. Some of the programs take advantage of Tool Kit 2 by Tony Tebby. All are 20.00, except QLuster, which is $15.00; includes P & H, add $1.00 CAN.Available as 3 1/2 or 5 1/4 disks. Add $5.00 for mailing to other countries. We accept personal checks, company checks, money orders as well as International Postal Money Orders, but no charge cards. If ordering on MDV, then please include one that is already formatted, so we will know it will run on your QL. Due to the expense of MDVs this is necessary. If two MDVs are required we will state so in the ad.

1) HARTUNG UTILITY ISSUE DISK- Several excellent programs such as stand alone data base, Address, and QSO files. All are in Superbasic. Lots of hints and tricks for programmers. Requires some knowledge of Superbasic or a yen to learn. Recently updated by Bob Hartung. Address file can be used as inventory program. It can print out labels. Both screen or paper printouts can be by Alpha sort, or be by last name.

2) CABLE ARCHIVE ISSUE DISK- Contains six Archive programs along with Doc files to get you going on making use of the Archive programming language. Also has Tasket, plus Doc file, to give you multi-tasking on your QL (much cheaper than QRAM or Taskmaster). Included is Arithmetic, a Superbasic program for math, along with math drills. This is for both the advanced and beginner user and greatly extends the use of Archive. To order on microdrive send two formatted microdrives, too much for one!

3) QLUSTER ISSUE DISK by Al Feng- Ql utilities to unclutter your disks and microdrives. COPY, DELETE, FORMAT, PRINT, VIEW, plus extended use of some Tool Kit 2 commands. TK2 is required. These are TURBO compiled for speed. Multitasks and uses minimal key presses. Includes Fast-Disk and Vegemat2, a super clone making program. Also Snap Shot-a directory column or condensed printout program.

4) DOS EMULATOR COMPANION ISSUE DISK by Al Feng- Just released in Oct. issue. Makes better use of Solution, PC Conqueror, DisCover, XOVER, QLuster and scr_codes. If you are going to use the emulators, then check this out, you won't regret this buy.

5) QLuMSi DOS by Al Feng- a MSDOS simulator and front end program for the QL, also includes other programs by AL Feng for file management and cloning of programs. A Great Learning Tool

6) QL COMPENDIOM- a three disk collection of utilities for the QL, taken from the various short programs in UPDATE, plus file compression, decompression, E_Forth for the QL, C utilities such as FLEX and YACC, Tcopye, Quad format,etc. All for only $20.00

UPDATE COMPUTER SYSTEMS invites you to submit software programs that may become Issue Disks. Please submit program on disk, with documentation and article to accompany the program. We are here to get North American software available and known.

TS2068 UPDATE ISSUE DISKS

These disks contain at least one major piece of software written specifically for disk drive and are guaranteed to be worth the money. The rest of the disks are filled with various utility programs taken from the issues of UPDATE and a few surprises thrown in. Half of the money goes to the author and is meant to encourage new programming for the TS2068 that makes use of the various disk drive systems. All are $20.00 per disk (add $1.00 Canada) except where noted in the listing. Postage and handling is included. Both 3 1/2 and 5 1/4, 40 and 80 track available. Please add $5.00 for mailing to other countries. We accept personal checks, company checks, money orders. No charge cards please.

1) NEW! PAYROLL by Jim Bretz. Payroll record program for employers,for the Larken System. Allows for accurate processing and use of employee earnings and tax records, etc.

2) Bob Hartung DOSDEX UTILITY ISSUE DISK, a complete disk management group of programs for the Oliger Interface only. This includes Multi-Manager for file handling. This collection has recently been updated and expanded.

3) MAIL MERGE ISSUE DISK, Oct 87 and Jan 88 issues of UPDATE utilities added to fill out this disk. Includes a tutor program for the Mail Merge program, List Looker, Purity, J-Utilities and Extra Memory Utilities. Larken, Oliger and Aerco versions.

4) WIDJUP'S CAD PROGRAM, this will give you professional results from your TS2068 for computer aided design. Authored by William J. Pedersen, perhaps the NO.1 authority on the inner workings of the TS2068. This program can be used to create user friendly printed circuit boards, computer art or desktop publishing files It does not need expanded memory cartridges and is available in four versions: (a) Oliger for either IBM compatible printers or for the Olivetti Ink Jet. (b) Larken for IBM compatible printers or the Olivetti Ink Jet printer. Please specify version.

5) OLIGER DISK DRIVE BBS PROGRAM, this allows users of the Oliger interface to be able to operate a disk based bulletin board from the TS2068. The disk is also filled with many other Oliger disk routines and tips on using the Oliger System. Written by Paul Holmgren. Can use upto four DSQD disk drives.

6)The HYBISCUS ENSEMBLE, consisting of two separate, but complimentary sets of programs. A) Daisy.B6 Ensemble, and B) Udbm.B6 Ensemble. LKDOS only, $22 each or $36 for both. The best file and database available for Larken, by Bill Jones. The price remains the same on this one, no change. Wordprocessor included.

7) TS2068 Super Calc by Bill Jones. Available in both Larken and Oliger formats. Handles loans, amortization, savings and fixed investments, plus a calculator and all for only $15.

UPDATE COMPUTER SYSTEMS invites you to submit software programs that may become Issue Disks. Please submit program on disk, with documentation and article to accompany the program. Our goal is to get North American software available and known. We also solicit minor programs, tips and utilities for print.